VHS videorecorder

Chassis code R7000

image / sound
programming
special features
connectors / general remarks

THOMSON
SCENIUM
ShowView
VHS
LECT 0.00

Standards : PAL / SECAM / MESECAM
Norms : LL'BGIDKK'
NTSC playback to PAL TV
Interactive menu control
Chroma Pro system

Normal speed / Longplay
HIFI stereo sound / NICAM
ShowView
Jog & shuttle

image / sound

Chroma Pro system
4 video heads + 2 audio heads
HIFI stereo sound / NICAM
Automatic and manual level control
playback sound selection (mono / HIFI / Mix)

programming

ShowView
VPS / PDC
Auto programming of TV channels
Auto clock setting
99 programmes positions
Mon-fri / weekly repeat
8 timers events from 1 year
Automatic tape recognition
Auto remaining time indication
Auto longplay

special features

High speed mecanism
Variable search
Real time / time remaining counter
Multi TV RC7009M remote control

connectors / general remarks

2 scarts
2 cinches audio in (front)
1 cinch video in (front)
Camcorder-pause in (front)
Microphone in (front)
Headphone in (front)
2 cinches audio in / out (rear)
1 cinch video in / out (rear)
Power supply : 220 - 240 V; 50/60 Hz
Consumption : 22 W/h - in stand-by mode 3 W/h
Weight : 5,5 kg
Dimensions (W x H x D) : 440 x 99 x 321 mm

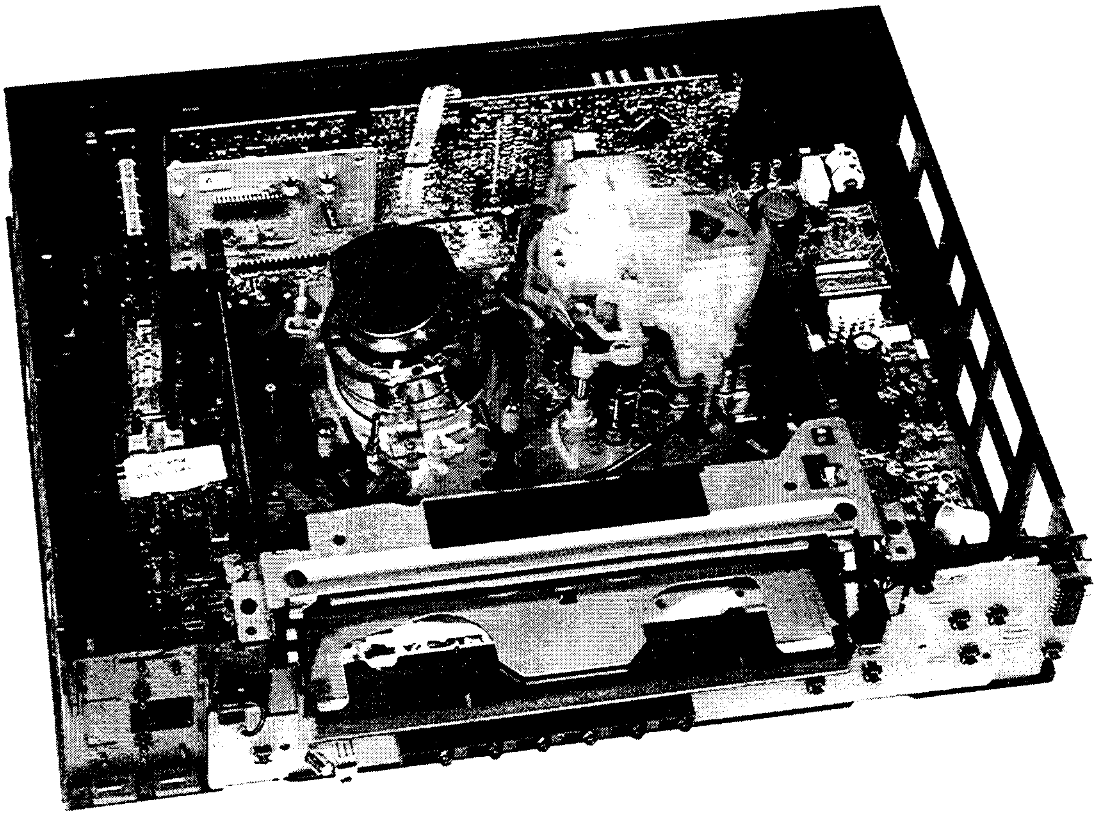
THOMSON MULTI MEDIA

Brandt FERGUSON **NORDMENDE** SABA **TELEFUNKEN** **THOMSON**

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R 7000



WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

⚠ Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu' ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen!
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare le piastre quando sono alimentate!
Per le riparazioni sulla sezione alimentatore, utilizzare un trasformatore isolatore.

No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione dei componenti di sicurezza (evidenziati con il segno ⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La sustitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER :
On UHF,input level : 1 mV, bar test pattern :
- PAL, I standard, 100% white.

Via the scart socket, input level : 1 Vpp, bar test pattern :

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR :
En UHF, niveau d'entrée 1 mV mire de barres
- SECAM, Norm L, Blanc 100%.

Par la prise Péritélévision, niveau d'entrée 1 Vcc, mire de barres .

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER :
Bei UHF Eingangspegel 1 mV, Farbbalken :
- PAL, Norm G, Weiss 100%.

Über die Scartbuchse : Eingangspegel 1 Vss, Farbbalken :

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.

Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

RICEVITORE :
In UHF, livello d'entrata 1 mV, monoscopio con barre :
- PAL, norma G. bianco 100%.

Via SCART, livello d'entrata 1 Vpp, monoscopio con barre :

Colore, Contrasto, Luminositá a meta corsa, Suono minimo.
Programma designato PR 01.

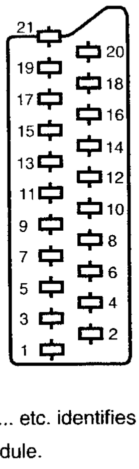
Tensioni continue rilevate rispetto alla massa con un voltametro digitale.

RECEPTOR :
En UHF, nivel de entrada 1 mV, mira de barras :
- PAL, norma G, blanco 100%.

Por la toma Peritelevision, nivel de entrada 1 Vpp mira de barra.

Color, Contraste, luz a mitad de carrera, Sonido minimo.
Programa afectado PR 01.

Tensiones continuas marcadas en relacion a la masa con un voltimetro digital.



NOTE : (MAIN) ... etc. identifies each pcb module.

NOTE : (MAIN) ... etc. repères des platines constituant l'appareil.

HINWEIS : (MAIN) ... usw. Kennzeichnung der Platinen, aus denen das Gerät zusammengesetzt ist.

NOTA : (MAIN) ... ecc. indicazioni delle piastre che costituiscono l'apparecchio.

NOTA : (MAIN) ... etc. marcas de las placas que constituyen el aparato.

		ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO	ESPAÑOL
1	○→	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
2	→○	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
3	○→	AUDIO "L"	AUDIO "G"	AUDIO "L"	AUDIO "S"	AUDIO "I"
4	⏚	AUDIO	AUDIO	AUDIO	AUDIO	AUDIO
5	⏚	"BLUE"	"BLEU"	"BLAU"	"BLU"	"AZUL"
6	→○	AUDIO "L" MONO	AUDIO "G" MONO	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "I" MONO
7	→○	"BLUE"	"BLEU"	"BLAU"	BLU	AZUL
8	→○	SLOW SWITCH	COMMUT. LENTE	AV UMSCHALTUNG	"COMMUTAZIONE LENTA"	"CONMUTACION LENTA"
9	⏚	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
10	NC					
11	→○	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
12	NC					
13	⏚	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
14	NC					
15	→○	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
16	→○	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
17	⏚	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
18	⏚	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
19	○→	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
20	→○	VIDEO OR "SYNC"	VIDEO SYNCHRO	VIDEO ODER SYNCHRO	VIDEO O SINCRO	VIDEO O SINCRO
21	○→	PLUG SCREEN BOX	BLINDAGE PRISE	ABSCHIRMUNG DES STECKERS	INVOLUCRO METALLICO DELLA PRESA	BLINDAJE DEL ENCHUFE

→○ : INPUT - ENTRÉE - EINGANG - ENTRATA - ENTRADA • ○→ : OUTPUT - SORTIE - AUSGANG - USCITA - SALIDA • ⏚ : EARTH - MASSE - MASSE - MASSA - MASA

GB 1. Maintenance Instructions

1.1 Disassembly

1.1.1 Top cover

a) Remove 5 securing screws from the back of the top cover.
b) Slide the top cover backwards and gently lift it off.

1.1.2 Front panel

a) Remove 2 securing screws from each side of the cassette housing.
b) Disengage the four top securing tabs and the two bottom scuring tabs.
c) Gently lift off the front panel.

1.1.3 Key Display Board (KDB)

a) Disconnect the flat wire connectors on the Key Display Board.
b) Release the 3 clips holding the KDB, then tilt the KDB forwards and lift the PCB out of the main chassis frame.

1.1.4 Bottom plate

a) Remove the single fixing screw from the bottom plate.
b) Press on the clip in the circular opening in the base plate and slide the plate backward to release it.

1.1.5 Main/mechanical board assembly

a) Remove the two screw from the mechadeck.
b) Disengage the 2 securing clips holding the main board in place.
c) Lift the cassette holder up to release the mechadeck assembly and the main board.

1.1.6 Cassette holder

Before carrying out this procedure, perform step 1.1.5.

a) Remove the upper part of the cassette holder by removing the 2 securing screws.
b) Place the cassette holder in a raised position.
c) Raise the cassette holder slightly on the drum side.
d) Release the white levers (on the left and right of the cassette holder), and push the cassette holder towards the drum until the rear guide pins come out of the side guide rails.
e) Now pull the cassette holder in the opposite direction until the guiding pins (front side) also come out of the side guide rails.

1.1.7 Separating the main board from mechanical board

Before carrying out this procedure, perform step 1.1.5.

a) Disconnect flat wire connectors BT002 (function control motor), BV001 (drum), BN002/BN004 (HIFI) and BS031 (ACE head).
b) Turn the assembly over and remove the PCB securing screw marked with a white arrow.
c) Remove the Capstan drive belt.
d) Release the 4 plastic securing clips and remove the main printed circuit board.

1.2 Service mode adjustments

1.2.1 KDB board service mode

Accessing service mode

a) Disconnect the video recorder from the mains supply.
b) Hold down the "+" and "-" keys on the front panel and reconnect the video recorder to the mains supply (For video recorders which do not have these keys, use "STOP" and "PLAY" keys instead). Release the "+" and "-" keys.
c) Dispayed by the On Screen Display (OSD), will be a 14-digit number, which represents the VCRs current configuration.
Use the numeric keys on the RCU to increase each value from 0 to F, apart from key 2 which is used to go to the next digit.
Each VCR has its own Set-up value - these values are listed in the summary table.
d) To save the new values, press STOP key. After saving, the switching point and 16 MHz clock settings must be re-aligned. The Service counter will also be reset to zero.
The FAST FORWARD key (>>) is used to go to the next pages in the service mode. These pages introduce the Service Counter and Self Diagnosis functions (only for UK models).
To leave service mode, press the EXIT (E) key on the RCU.

1.2.2 Head switching point

a) Insert a protected test cassette in the video recorder. The VCR will automatically enter the play mode. When "PLAY E----" is displayed, press the STATUS key on the RCU.
b) Next simultaneously press the "+" , "-" and "PLAY" keys on the front panel of the VCR (or STOP, STBy and PLAY for models which do not have the "+" and "-" keys).
c) "ADJ" will appears in the display, after a few seconds, stop the adjustment procedure by pressing the PLAY key on the front panel of the VCR. (See section 2.3.6 Electrical settings)

1.2.3 Adjusting the 16-MHz clock

a) To compensate for 16 MHz quartz's tolerances an error compensation signal is saved in the EEPROM. This error signal is measured by comparing the 16 MHz clock frequency with the frequency of the Video Sync. Signal.
Connect an aerial to the tuner input and select a PAL/Secam channel with a 50 Hz signal (frame frequency).
Check that there is not a cassette in the video recorder.
b) Press the "+", "-" and "PLAY" keys (or STOP, STBY and PLAY for certain models which do not have the "+" and "-" keys). "ADJ" will appear in the display and adjustment mode will start. Wait 30 seconds (for computing and saving in EEPROM).
c) To stop the process and save the information in the EEPROM, insert a cassette and press the "EJECT" key.

Important note:
This adjustment is saved in EEPROM IT004 - if this is replaced, the Set-up value corresponding to the commercial model number must be re-entered, and both the video heads switching points and the 16-MHz clock re-adjusted.

1.3 Operating time

The operating time is given in hours by the Service counter.

1.4 Self Diagnosis (UK models only)

When a mechanical problem or operating error occurs, a 10-digits number representing the malfunction is stored in the EEPROM. This number will be displayed on the TV screen when the VCR is switched "ON", analysis of this number will assist in finding a solution to the problem encountered.

1.4.1 Displaying error messages

To acces the error message, either:

a) Press the fast foward key (>>) on the RCU, whilst in the SERVICE SETUP mode, or
b) Press and **hold** the "ERASE" key for 10 seconds, if there is no display on the television screen and the VCR is in the **STOP or STANDBY mode**

1.4.2 Interpreting error messages

The meaning of the various error message codes are given in the table below.

Number of digit	Meaning	Value
1 and 2	Target mechadeck and current mechadeck positions	1 - Wind 2 - Stop 3 - Standby 3 - Play 4 - Rev 5 - Loading/Unloading 6 - Off 7 - Eject F - Initial
3 and 4	Task servo is performing	00 - Stop 01 - FRew 02 - FF 04 - Play 11 - Rev 12 - Cue 44 - Record 84 - Still C4 - Rec Pause 40 - Rec/Rec P 10 - Search mode
5,6,7 and 8	Task active prior to abnormal off	bit 0
	Normal	0 0 0 0
	Record	0 0 0 1
	Step	0 0 0 4
	Off	0 0 0 8
	Eject	0 0 1 0
	Stop	0 0 2 0
	Capbrake	0 0 4 0
	Initial	0 0 8 0
	Endless Record	0 2 0 0
	Endless Play	0 4 0 0
	Continuous	0 8 0 0
	Wind	1 0 0 0
	Search	2 0 0 0
	Still	4 0 0 0
	Play	8 0 0 0
9 and 10	Abnormal flags	81 - Drum 82 - Left Reel 84 - Right Reel 88 - Task incomplete

TECHNICAL DATA AND COMPOSITION OF VIDEO RECORDERS
CARACTERISTIQUES TECHNIQUES ET COMPOSITION DES MAGNETOSCOPES
TECHNISCHE DATEN UND ZUSAMMENSETZUNG VIDEORECORDERS
CARATTERISTICHE TECNICHE E COMPOSIZIONE VIDEOREGISTRATORI
CARACTERISTICAS TECNICA Y COMPOSICIÓN DE LOS VÍDEOS

Power requirement:	220 - 240 V ± 10%	4 Heads Helical Scan system:		Consumption	22 W
Alimentation:	50/60Hz	4 têtes video:		Consommation:	3 W (ECO)
Netzeil:		4 Video-Köpfe:	* / **	Leitstungsaufnahme	
Alimentazione:		4 Testine video		Consumo:	
Alimentación:		4 Cabezas video:		Consumo:	

Programming:	**SHOWVIEW**	2 Heads Helical Scan system:		Sound:	HiFi Stereo
Programmation:		2 têtes video:		Son:	
Timer:		2 Video-Köpfe:		Ton:	
Programmazione:		2 Testine video		Suono:	
Programación:		2 Cabezas video:		Sonido:	

Tape speed:	SP	Tape format:	VHS	Power save:	30 min.
Vitesse de défilement:	SP/LP *	Format video:		Sécurité secteur:	
Bandgeschwindigkeit:	SP/LP/SLP **	Video-system:		Gangreserve:	
Velocitá del nastro:		Formato video:		Sicurezza alimentazione:	
Velocidad de la cinta:		Formato vídeo:		Seguridad red:	

SP = 23,39 mm/sec.

LP = 11,70 mm/sec.

SLP = 33,35 mm/sec. (Only NTSC PB)

For service information on the deck mechanism see separate publication "R4000 SERIES MECHANICAL ADJUSTMENTS" and "R4000 DRUM DISASSEMBLY / ASSEMBLY SERVICE MANUAL".

Pour toute intervention ou réglage sur la partie mécanique, se reporter au FASCICULE MECANIQUE R4000 ainsi qu'à son additif: "DEMONTAGE DU TAMBOUR SUR LES MAGNETOSCOPES EQUIPES DU CHASSIS R4000".

Informationen über mechanische Einstellungen entnehmen Sie bitte dem Handbuch "MECHANISCHE EINSTELLUNGEN R4000"

Ulteriori informazioni sulla meccanica si possono essere trovare nelle seguenti pubblicazioni: "SERIE R4000 REGOLAZIONI MECCANICHE" e R4000 MANUALE DI SERVIZIO PER IL DISASSEMBLAGGIO DEL TAMBURO".

Para información de servicio técnico sobre el mecanismo de la platina, consulte la documentación separada "AJUSTES MECANICOS SERIES R4000" y "MANUAL DE SERVICIO ENSAMBLAJE DEL TAMBOR R4000"

SCHEMATIC DIAGRAMS & PCBs

Reference	Number of Setup	Interconnexions diagrams	Main PCB	Pow/TU/FI	Main Servo	Main Video	Audio scart	Secam	KDB/FCB	JSB
THOMSON										
VPH6800F**	**01109E04B0919B**	11-13	51-56	83-87	75-82	61-70	14-20	57-60	21-24	49
VPH6850F**	**01109E44B091BB**	11-13	51-56	83-87	75-82	61-70	14-20	57-60	21-24	49
VPH6850G**	**1A229E42B1B1B3**	11-13	51-56	83-87	75-82	61-66 71-74	14-20	-	33-36	49
TELEFUNKEN										
M9860G**	**1A229E42B1B1B3**	11-13	51-56	83-87	75-82	61-66 71-74	14-20	-	37-40	49
FERGUSON										
FV305HV**	**29019E00799193**	11-13	51-56	83-87	75-82	61-66 71-74	14-20	-	29-32	-
FV306HV**	**29119E60B991B3**	11-13	51-56	83-87	75-82	61-66 71-74	14-20	-	45-48	49
SABA										
EV600F**	**01109E04B091BB**	11-13	51-56	83-87	75-82	61-70	14-20	57-60	25-28	50
EV600G**	**1A229E02B1B1B3**	11-13	51-56	83-87	75-82	61-66 71-74	14-20	-	41-44	50
BRANDT										
VK841PS**	**01109E0440119B**	11-13	51-56	83-87	75-82	61-70	14-20	57-60	29-32	-

D 1. Ausbau

1.1 Wartungsanleitung

1.1.1 Gehäuseoberteil

a) Die 5 Schrauben des oberteils entfernen.
b) Das gehäuseoberteil leicht nach hinten schieben und anheben.

1.1.2 Frontverkleidung

a) Die beiden Schrauben vorn links und rechts an den Seiten des Kassettenträgers entfernen.
b) Die 4 oberen Klemmen der Frontverkleidung anheben, nach vorn und dann nach unten ziehen, dabei die beiden Klemmen unter der Frontverkleidung freilegen.

1.1.3 Steuerplatine (KDB)

a) Die Anschlüsse der Steuerplatine abklemmen.
b) Die drei Klemmen, die die KDB halten, freilegen und nach vorn und dann nach oben ziehen.

1.1.4 Untere Verkleidung

a) Die Befestigungsschraube der unteren Verkleidung entfernen.
b) Auf die Klemme in der kreisförmigen Öffnung der Verkleidung drücken und die Verkleidung nach hinten ziehen, um sie zu entfernen.

1.1.5 Einheit Haupt- und Mechanikplatine

a) Die Halterungsschraube der unteren Verkleidung entfernen.
b) Die Frontverkleidung entfernen und die Anschlüsse der Steuerplatine abklemmen.
c) Die 2 Schrauben der Mechanikplatine entfernen.
d) Die 2 Klemmen, die die Hauptplatine halten, lösen.
e) Den Kassettenträger nach oben ziehen, um die Einheit Mechanik mit der Hauptplatine freizulegen.

1.1.6 Kassettenträger

Erst den Schritt 1.1.5 durchführen.
a) Den oberen Teil des Kassettenträgers durch herausdrehen der 2 Schrauben entfernen.
b) Den Kassettenträger in Hochstellung bringen.
c) Den Kassettenträger an der Trommelseite leicht anheben.
d) Die weiben Hebel (links und rechts vom Kassettenträger) lockern und diesen in Richtung Trommel drücken, bis die Nocken (hintere Seite) aus den Führungen springen.
e) Den Kassettenträger jetzt in die entgegengesetzte Richtung ziehen, bis die Nocken (vordere Seite) ebenfalls aus den Führungen springen.

1.1.7 Trennen der Hauptplatine und der Mechanikplatine

Erst den Schritt 1.1.5 befolgen.
a) Die Anschlüsse BT002 (Funktionssteuerungsmotor), BV001 (Trommel), BN002/BN004 (HIFI) und BS031 (Kopf A/A) abklemmen
b) Die mit einem Pfeil markierte Schraube an der Kupferseite der Hauptplatine entfernen.
c) Den Antriebsriemen entfernen.
d) Die 4 Klemmen lösen und die Hauptplatine entfernen.

1.2 Einstellungen Betriebsmodus

1.2.1 Betriebsmodus KDB Platine

Zugang zum Betriebsmodus:
a) Den Videorecorder vom Netz trennen.
b) Die Tasten « + » und « - » gedrückt halten, Videorecorder ans Netz anschließen.(Wenn diese Tasten nicht vorhanden sind, « STOP » und « PLAY » drücken.) Die Tasten « + » und « - » loslassen.
c) Auf dem Schirm (OSD) erscheint eine Reihe von 14 Digitalanzeigen, die aktuelle Konfiguration anzeigen.
Mit den Nummerntasten der Fernbedienung die Werte von 0 bis F erhöhen, außer der Taste 2, die zum Weitergehen auf die nächste Anzeige dient.
Jedes Gerät hat seinen eigenen Setup, diese Werte sind im Inhaltzverzeichnis angegeben.
d) Um neue Werte abzuspeichern, STOP drücken. Nach dem Abspeichern muß die Einstellung der Umschaltpunkte und der Uhrzeit 16MHz neu vorgenommen werden. Der Betriebsstundenzähler wird auf 0 zurückgesetzt (service counter).
Die Taste SCHNELLVORLAUF (>>) dient dem Erreichen der nächsten Seiten des Betriebsmodus. Diese Seiten enthalten die Funktionen « Service Counter » und « Autodiagnose » **(nur für Modelle UK).**
Um den Betriebsmodus zu verlassen, die Taste EXIT (E) auf der Fernbedienung drücken.

1.2.2 Umschaltpunkt für die Videoköpfe

Eine geschützte Testkassette in den Videorecorder einlegen. Dieser schaltet automatisch auf Abspielen. Wenn « PLAY » angezeigt wird, die Taste « STATUS » auf der Fernbedienung drücken. Anschliebend gleichzeitig die Tasten « + », « - » und dann PLAY auf der Frontverkleidung (oder STOP, STBY und PLAY für Modelle ohne die vorgenannten Tasten) drücken. « ADJ » wird eingeblendet.
Der Videorekorder bleibt im Abspielmodus. Nach einigen Sekunden die Einstellung durch Drücken der Taste « PLAY » auf der Frontverkleidung beenden. (Siehe § 2.3.6 der elektrischen Einstellungen)

1.2.3 Einstellen der Uhrzeit 16 MHz

Um die Abweichung des 16 MHz Quartzes auszugleichen, ist eine entsprechende Information im EEPROM abgespeichert. Die Abgleichung erfolgt durch den Vergleich der Frequenz der 16 MHz Uhr mit der Frequenz des Video Sync. Signals. Der Abgleichwert wird in EEPROM abgespeichert.
Die Antenne am Tunereingang anschließen und auf einen PAL/SECAM Sender mit 50 Hz Signal einstellen (Rasterfrequenz). Sicherstellen, daß keine Kassette im Recorder ist. Die Tasten « + », « - » und « PLAY » (oder STOP, STBY und PLAY bei einigen Modellen, die nicht über die zuvor genannten Tasten verfügen). « ADJ » wird eingeblendet, die Einstellung ist aktiviert. 30 Sekunden warten (Berechnung und Abspeicherung EEPROM). Eine Kassette einlegen, um den Vorgang zu beenden und dann die Kassette auswerfen lassen.
Wichtig:
Diese Einstellungen sind im EEPROM IT004 abgespeichert, bei Austausch müssen die entsprechenden Setup-Werte aus der Handelsreferenz eingegeben, die Umschaltpunkte der Videoköpfe und die Uhrzeit 16 MHz eingestellt werden.

1.3 Betriebsdauer

Diese Information wird in Stunden durch den « Service Counter » angegeben.

1.4 Autodiagnose (nur Modelle UK)

Bei einer mechanischen Störung oder infolge eines Bedienfehlers wird eine 10-stellige Zahl, die die Fehlfunktion darstellt, im EEPROM abgespeichert.
Die Anzeige und Analyse dieser Zahl auf dem Schirm kann zur Lösung des eines Problems beitragen.

1.4.1 Einblenden der Fehlermeldung

Zugang zur Fehlermeldung:
a) Wenn die Seite « SERVICE SETUP » auf dem Schirm eingeblendet ist, die Schnellvorlauftaste « >> » auf der Fernbedienung drücken.
b) Im **STOP oder STANDBY – Modus**, wenn keine Information auf dem Bildschirm eingeblendet ist, die ERASE-Taste 10 Sekunden lang drücken.

1.4.2. Bedeutung der Fehlermeldung

Die Bedeutung der verschiedenen Ziffern der Fehlermeldung wird in

Ziffer	Bedeutung	Wert
1 und 2	Ziel-Hauptleiterplatte und deren aktuelle Einstellungen	1 - Aufspulen 2 - Stop 3 - Standby 3 - Wiedergabe 4 - Rev 5 - Laden/Entladen 6 - Ausschalten 7 - Auswerfen F - Anfang
3 und 4	Ausgeführte Servo-Funktion	00 - Stop 01 - Schneller Rücklauf 02 - Schneller Vorlauf 04 - Wiedergabe 11 - Rev 12 - Cue 44 - Aufnahme 84 - Standbild C4 - Aufnahmepause 40 - Aufn./Aufn.pause 10 - Suchlauf
5, 6, 7 und 8	Funktion vor außergrwöhnlichem Ausschalten	bit 0
	Normal	0 0 0 0
	Aufnahme	0 0 0 1
	Schritt	0 0 0 4
	Aus	0 0 0 8
	Auswurf	0 0 1 0
	Stop	0 0 2 0
	Capbrake	0 0 4 0
	Anfang	0 0 8 0
	Endlosaufnahme	0 2 0 0
	Endloswiedergabe	0 4 0 0
	Fortlaufend	0 8 0 0
	Aufspulen	1 0 0 0
	Suchlauf	2 0 0 0
	Standbild	4 0 0 0
	Wiedergabe	8 0 00
9 und 10	Außergewöhnliche Indikatoren	81 - Trommel 82 - Linke Spule 84 - Rechte Spule 88 - Funktion nicht beende

Ⓕ 1. Instructions de maintenance

1.1 Démontage

1.1.1 Coffret supérieur

a) Enlever les 5 vis du capot.
b) Glisser le coffret supérieur légèrement vers l'arrière et le soulever.

1.1.2 Façade

a) Enlever les 2 vis situées sur les côtés avant gauche et droit du porte-cassettes.
b) Soulever les 4 clips supérieurs de la façade, tirer vers l'avant puis vers le bas en dégageant les 2 clips situés au dessous de celle-ci.

1.1.3 Platine de commandes (KDB)

a) Débrancher les connecteurs de la platine de commande.
b) Libérer les 3 clips maintenant la KDB, puis l'incliner vers l'avant et tirer vers le haut.

1.1.4 Blindage inférieur

a) Enlever la vis de fixation du blindage inférieur.
b) Appuyer sur le clip dans l'ouverture circulaire du blindage et le glisser vers l'arrière pour le retirer.

1.1.5 Ensemble platine principale et mécanique

a) Enlever la vis de fixation du blindage inférieur.
b) Enlever la façade et débrancher les connecteurs de la platine de commandes.
c) Enlever les 2 vis de la platine mécanique.
d) Libérer les 2 clips qui maintiennent la platine principale
e) Tirer le porte-cassette vers le haut pour dégager l'ensemble mécanique avec la platine principale.

1.1.6 Porte-cassette

Avant d'effectuer cette opération, exécuter l'étape 1.1.5 .
a) Enlever la partie supérieure du porte-cassette en ôtant les 2 vis.
b) Mettre le porte-cassette en position haute.
c) Lever légèrement le porte-cassette du côté du tambour.
d) Libérer les leviers blancs (à gauche et à droite du porte-cassette) et pousser celui-ci vers le tambour jusqu'à ce que les ergots (côté arrière) sortent des rails de guidage.
e) Tirer maintenant le porte-cassette dans la direction opposée jusqu'à ce que les ergots (côté avant) sortent également des rails.

1.1.7 Séparation de la platine principale de la platine mécanique

Avant d'effectuer cette opération, exécuter l'étape 1.1.5.
a) Débrancher les connecteurs BT002 (moteur de contrôle fonctions), BV001 (tambour), BN002/BN004 (HIFI) et BS031 (tête A/A)
b) Enlever la vis marquée d'une flèche du côté cuivre de la platine principale.
c) Enlever la courroie cabestan.
d) Libérer les 4 clips et retirer la platine principale.

1.2 Réglages du mode service

1.2.1 Mode service platine KDB.

Accès au mode service:

a) Déconnecter le magnétoscope du secteur.
b) Maintenir appuyer les touches «+» et «-» puis connecter le magnétoscope au secteur. (Pour ceux ne disposant pas de ces touches, utiliser «STOP» et «PLAY»). Relâcher les touches «+» et «-».
c) Sur l'écran (OSD), une série de 14 digits s'affichent, représentant la configuration présente.
Utiliser les touches numérique de la télécommande pour incrémenter chaque valeurs de 0 à F sauf la touche 2 qui permet de passer au digit suivant.
Chaque appareils a sa propre valeur de Setup, ces valeurs sont répertoriées dans le sommaire.
d) Pour mémoriser les nouvelles valeurs, appuyer sur STOP. Après mémorisation, il est nécessaire de reprendre les réglages des points de commutation et de l'horloge 16MHz, le compteur du temps de fonctionnement (Service counter) est remis à zéro.
La touche AVANCE RAPIDE (>>) est utilisée pour accéder aux pages suivantes du mode Service. Ces pages introduisent les fonctions «Service Counter» et «Auto diagnostique» **(seulement pour les modèles UK).**
Pour sortir du mode service presser la touche EXIT(E) de la télécommande.

1.2.2 Point de commutation des têtes.

Introduire une cassette test protégée dans le magnétoscope. Celui ci passe automatiquement en mode lecture. Lorsque l'affichage indique «PLAY» presser la touche «STATUS» de la télécommande. Appuyer ensuite, simultanément, sur les touches «+»,«-» et «PLAY» de la façade (ou STOP, STBY et PLAY pour certains modèles ne possédant pas les touches «+» et «-»). l'affichage indique "ADJ". Le magnétoscope va rester en mode lecture. Après quelques secondes, arrêter le réglage en pressant sur la touche «PLAY» . (Voir § 2.3.6 des réglages électriques)

1.2.3 Ajustement de l'horloge de 16 MHz

Pour compenser la tolérance du quartz de 16 MHz, l'information de compensation est mémorisée dans l'EEPROM. L'ajustement est réalisé par comparaison de la fréquence d'horloge de 16 MHz avec le la fréquence du signal Sync. Vidéo. La valeur de compensation sera mémorisée dans l'EEPROM.
Connecter l'antenne à l'entrée du tuner et ajuster sur un canal PAL/Secam avec un signal de 50 Hz (fréquence trame). Vérifier qu'aucune cassette n'est introduite dans le magnétoscope. Presser les touches « + », « - » et « PLAY » (ou STOP, STBY et PLAY pour certains modèles ne possédant pas les touches «+» et «-»). "-ADJ" apparaît à l'écran, le réglage est activé. Attendre 30 secondes (pour calculer et mémoriser dans l'EEPROM). Insérer une cassette pour arrêter le processus et éjecter la cassette.
Note importante :
Ces réglages sont mémorisées dans l'EEPROM IT004, après changement de celle-ci, il est nécessaire de rentrer la valeur de Setup correspondante à la référence commercial, de régler les points de commutation des têtes vidéo, et l'horloge 16MHz.

1.3 Temps de fonctionnement.

Ce temps est donné en heure par l'information "Service counter".

1.4 Auto diagnostique (modèles UK seulement)

Lorsqu'il se produit un incident mécanique où suite à une erreur de manipulation, un nombre de 10 chiffres représentant ce mauvais fonctionnement est mémorisé dans l'EEPROM.
L'affichage à l'écran de ce nombre peut permettre, par son analyse, de résoudre le problème rencontré.

1.4.1 Affichage du message d'erreur

Accès au message d'erreur :
a) Lorsque la page «SERVICE SETUP» est affiché à l'écran, appuyer sur la touche avance rapide «>>» de la télécommande.
b) En **mode STOP ou STANDBY**, lorsqu'il n'y a aucun affichage sur l'écran du téléviseur, appuyer sur la touche ERASE pendant 10 secondes.

1.4.2 Interprétation du message d'erreur

La signification des différents chiffres composant le message d'erreur est donnée dans le tableau ci-dessous.

Numéro du digit	Signification	Valeur
1 et 2	Fonction demandée et position de la mécanique au moment de l'incident	1 - Av. ou Ret. rapide 2 - Stop 3 - Standby 3 - Lect. 4 - Lect. Ar. 5 - Charg ./ Décharg. 6 - Arrêt (en butée déchargé) 7 - Eject. F - Initialisation
3 et 4	Fonction réalisée par le µP (Gestion / Asserv.)	00 - Stop 01 - Retour rapide 02 - Avance rapide 04 - Lect. 11 - Lect Ar. 12 - Rech. / Lect. 44 - Enreg. 84 - Arrêt sur image C4 - Pause Enreg. 40 - Enreg./Pause Enreg. 10 - Recherche
5,6,7 et 8	Fonction en cours avant anomalie	bit 0
	Normal	0 0 0 0
	Enreg.	0 0 0 1
	Image / image	0 0 0 4
	Arrêt (en butée déchargé)	0 0 0 8
	Eject.	0 0 1 0
	Stop	0 0 2 0
	Frein de cabestan	0 0 4 0
	Initialisation	0 0 8 0
	Enreg. en boucle	0 2 0 0
	Lect. en boucle	0 4 0 0
	Enreg. ou Lect. en boucle	0 8 0 0
	Av. ou Rect. rapide	1 0 0 0
	Recherche	2 0 0 0
	Arrêt sur image	4 0 0 0
	Lect.	8 0 0 0
9 et 10	Indication de l'anomalie	81 - Tambour 82 - Porte bobine gauche 84 - Porte bobine droit 88 - Fonction incomplète

Ⓔ 1. Instrucciones de mantenimiento

1.1 Desmontaje

1.1.1 Tapa superior

a) Retire los 5 tornillos de la tapa
b) Deslice ligeramente en cofre superior hacia atrás y levántelo

1.1.2 Frontal

a) Retire los 2 tornillos situados a los costados adelante a la izquierda y a la derecha del portacassettes.
b) Levante los 4 clips superiores del frontal, tire hacia adelante y luego hacia abajo despejando los dos clips situados bajo ésta.

1.1.3 Placa de comandos (KDB)

a) Desconecte los conectores de la placa de comando.
b) Libere los tres clips que sujetan la KDB y luego inclínela hacia adelante y tire hacia arriba.

1.1.4 Blindaje inferior

a) Retire el tornillo de fijación del blindaje inferior.
b) Presione sobre el clip en la abertura circular del blindaje y deslícelo hacia atrás para retirarlo.

1.1.5 Conjunto placa principal y mecánica

a) Retire el tornillo de fijación del blindaje inferior.
b) Retire la fachada y desconecte los conectores de la placa de comandos.
c) Retire los 2 tornillos de la placa mecánica.
d) Libere los 2 clips que mantienen la placa principal.
e) Tire el portacassette hacia arriba para despejar el conjunto de la mecánica con la placa principal.

1.1.6 Portacassette

Antes de efectuar esta operación debe ejecutar la etapa 1.1.5.
a) Retire la parte superior del portacassette desmontando los 2 tornillos.
b) Ponga el portacassette en posición alta.
c) Levante ligeramente el portacassette por el lado del tambor.
d) Libere las palancas blancas (a la izquierda y a la derecha del portacassette) y empújelo hacia el tambor hasta que las puntas (traseras) salgan de los raíles guías.
e) Tire el portacassette en la dirección opuesta hasta que las puntas (delanteras) también se liberen de los raíles.

1.1.7 Separación de la placa principal de la placa mecánica

Antes de efectuar esta operación debe ejecutar la etapa 1.1.5.
a) Desconecte los conectores BT002 (motor de control de funciones). BV001 (tambor), BN002/BN004 (HIFI) y BS031 (cabeza A/A).
b) Retire los tornillos marcados con una flecha por el lado de cobre de la placa principal.
c) Retire la correa de la polea.
d) Libere los 4 clips y retire la placa principal.

1.2 Ajustes del modo servicio

1.2.1 Modo servicio de la placa KDB

Acceso al modo servicio:
a) Desconecte el vídeo de la red eléctrica.
b) Mantenga pulsadas las teclas « + » y « - » y luego conecte el vídeo a la red eléctrica (en aquellos videos que no tiene estas teclas, use « STOP » y « PLAY »). Suelte las teclas « + » y « - ».
c) En la pantalla (OSD), aparecen una serie de 14 dígitos que representan la configuración en curso.
Use las teclas numéricas del telemando para incrementar cada valor de 0 a F, la tecla 2 permite pasar al dígito siguiente.
Cada aparato tiene su propio valor de Configuración, estos valores se indican en el Sumario.
d) Para memorizar los nuevos valores, pulse « STOP ». Después de la memorización, se deben reajustar los ajustes de los puntos de conmutación y del reloj 16 MHz, el contador del tiempo de funcionamiento (Contador de servicio) se pone a cero.
La tecla AVANCE RAPIDO (>>) se emplea para acceder a las páginas siguientes del modo servicio. Estas páginas introducen las funciones « Contador de servicio » y « Autodiagnóstico » (sólo para los modelos UK).
Para salir del modo servicio pulse la tecla EXIT(E) del telemando.

1.2.2 Punto de conmutación de las cabezas

Introduzca una cinta patrón protegida en el vídeo. Este pasa automáticamente al modo lectura. Cuando la visualización indica « PLAY » pulse la tecla « STATUS » del telemando. Luego, pulse simultáneamente las teclas « + », « - » y luego, « PLAY » del frontal (o PLAY, STBY y STOP en los modelos que no tienen las teclas « + » y « - »). En la pantalla aparece « ADJ ». El vídeo permanece en modo lectura. Después de algunos segundos, detener el ajuste pulsando la tecla « PLAY » del frontal. (Vea el § 2.3.6 sobre los ajustes eléctricos).

1.2.3 Ajuste del reloj de 16 MHz

Para compensar la tolerancia del cuarzo de 16 MHz , la información de compensación se memoriza en la EEPROM. El ajuste se realiza por comparación de la frecuencia del reloj de 16 MHz con la frecuencia de la señal de sincronización vídeo. El valor de compensación se memorizará en la EEPROM.
Conecte la antena a la entrada del sintonizador y ajuste a un canal PAL/Secam con una señal de 50 Hz (frecuencia de trama). Verifique que ningún cassette se encuentra en el vídeo. Pulse las teclas « + », « - » y « PLAY » (o STOP, STBY y PLAY en los modelos que no tienen las teclas « + » y « - »). En la pantalla aparece « ADJ », se activa el ajuste. Espere 30 segundos (para calcular y memorizar en la EEPROM). Introducir un cassette para detener el proceso y expulsar el cassette.

Nota importante:
Estos ajustes se memorizan en la EEPROM IT004, si ella se cambia, debe introducir el valor de configuración correspondiente a la referencia comercial, ajustar los puntos de conmutación de las cabezas vídeo y el reloj de 16 MHz.

1.3 Tiempo de funcionamiento

Este tiempo se da en horas en el « Contador de servicio ».

1.4 Autodiagnóstico (sólo para los modelos UK)

Cuando se produce un incidente mecánico o después de un error de manipulación, se memoriza en la EPROM un número de 10 cifras que representa este funcionamiento defectuoso.
La visualización de este número en la pantalla puede permitir la solución del problema que se ha presentado.

1.4.1 Visualización del mensaje de error

Acceso al mensaje de error:
a) Cuando se visualiza la página « SERVICE SETUP » en la pantalla; pulse la tecla de avance rápido « >>« del telemando.
b) En **modo STOP o STANDBY**, cuando no hay visualización en la pantalla del televisor, pulse la tecla ERASE durante 10 segundos.

1.4.2 Interpretación del mensaje de error

El significado de los números que componen el mensaje de error se indica en el cuadro siguiente:

Número de dígito	Significado	Valor
1 y 2	Función solicitada y posición de la mecánica en el momento del fallo	1- Avance 2. Stop 3. Standby 3. Play 4. Rev 5. Carga/Descarga 6. Off 7. Expulsar F. Inicial
3 y 4	Tarea servo ejecutándose	00. Stop 01. Frew 02. FF 04. Play 11. Rev 12. Cue 44. Record 84. Still C4. Rec Pause 40. Rec/Rec P 10. Modo búsqueda
5,6,7 y 8	Tarea activa antes de parada anormal	bit 0
	Normal	0 0 0 0
	Record	0 0 0 1
	Step	0 0 0 4
	Off	0 0 0 8
	Eject	0 0 1 0
	Stop	0 0 2 0
	Freno del capstan	0 0 4 0
	Initial	0 0 8 0
	Grabación infinita	0 2 0 0
	Lectura infinita	0 4 0 0
	Contínuo	0 8 0 0
	Avance	1 0 0 0
	Búsqueda	2 0 0 0
	Parada	4 0 0 0
	Lectura	8 0 0 0
9 y 10	Indicación de la anomalía	81. Tambor 82. Bobina izquierda 84. Bobina derecha 88. Tarea incompleta

Ⓘ 1. Istruzioni di Manutenzione

1.1 Smontaggio

1.1.1 Coperchio superiore

a) Togliere le 5 viti dal coperchio.
b) Spingere leggermente all'indietro il coperchio superiore e sollevarlo.

1.1.2 Frontale

a) Togliere le 2 viti che si trovano sui lati destro e sinistro del portacassette.
b) Sollevare i 4 ganci superiori del frontale, tirare in avanti poi verso il basso, liberando i 2 fermi sotto il frontale.

1.1.3 Piastra comandi (KDB)

a) Staccare il cavo di collegamento dalla piastra comandi.
b) Liberare i 3 ganci che trattengono la KDB, quindi inclinare in avanti e tirare verso l'alto.

1.1.4 Coperchio inferiore

a) Togliere la vite di fissaggio del coperchio inferiore.
b) Premere sul fermo nell'apertura del coperchio e farlo scivolar all'indietro per rimuoverlo.

1.1.5 Insieme piastra principale e meccanica

a) Togliere la vite di fissaggio del coperchio inferiore.
b) Togliere il frontale e staccare il cavo di collegamento dalla piastra comandi.
c) Togliere le 2 viti di fissaggio della meccanica.
d) Sganciare i 2 fermi che bloccano la piastra principale.
e) Tirare il portacassette verso l'alto per liberare l'insieme meccanica / piastra principale.

1.1.6 Portacassette

Prima di procedere con questa operazione, eseguire il punto 1.1.5
a) Togliere la parte superiore del portacassette rimuovendo le 2 viti.
b) Disporre il portacassette nella posizione finale più alta (posizione "Eject").
c) Sollevare leggeremente il lato vano cassette posizionato vicino al tamburo testine.
d) Liberare le leve bianche (a sinistra e a destra del portacassette) quindi spingere quest' ultimo verso il tamburo, fino a che i perni guida (sul lato posteriore) non saranno usciti dai binari.
e) Spingere infine il portacassette nella direzione opposta, fino a quando anche i perni guida del lato anteriore non saranno usciti dai binari.

1.1.7 Separazione della piastra principale e della piastra meccanica

Prima di procedere con questa operazione, eseguire il punto 1.1.5
a) Staccare i collegamenti BT002 (motore controllo funzioni), BV001 (tamburo), BN002/BN004 (HF-FI) e BS031 (testina A/C).
b) Togliere la vite contraddistinta dalla freccia, sul lato rame della piastra principale.
c) Togliere la cinghia motore.
d) Sganciare i 4 fermi e togliere la piastra principale.

1.2 Regolazioni Service Mode

1.2.1 Software set up KDB

Accesso al Service Mode
a) Scollegare il videoregistratore dalla rete.
b) Mantenere premuti i tasti "+" e "-", quindi collegare il VR alla rete (in caso questi due tasti siano mancanti, utilizzare "STOP" e "PLAY"). Rilasciare i tasti "+" e "-".
c) Sullo schermo (OSD) apparirà una serie di 14 numeri che rappresentano la configurazione attuale.
Utilizzare il tasto 2 del telecomando per selezionare il digit successivo, mentre gli altri tasti numerici aumentano il valore del digit da 0 a F.
Ciascun apparecchio possiede un proprio valore di impostazione: tali valori sono elencati nell'apposita tabella.
d) Premere su STOP per memorizzare.
A memorizzazione avvenuta, è indispensablile regolare il punto di commutazione delle testine e del clock a 16MHz. Il contatore del tempo di funzionamento (Service counter) viene azzerato.
Utilizzare il tasto avanzamento veloce per accedere alle pagine successive del Service Mode. Queste pagine introducono le funzioni "Service counter" e "Diagnosi automatica" (unicamente per i modelli destinati alla Gran Bretagna).
Per uscire dal Service Mode premere il tasto EXIT del telecomando.

1.2.2 Punto di commutazione delle testine

Introdurre una cassetta test protetta nel videoregistratore, che commuta automaticamente in riproduzione. Quando il display indica "PLAY", premere il tasto "STATUS" del telecomando. Quindi, premere contemporaneamente i tasti "+" e "-" e infine il tasto "PLAY" sul frontale (oppure "STOP", "STBY" e "PLAY" per i modelli sprovvisti dei tasti "+" e "-"). Il display indichera "ADJ" con il VR in riproduzione. Dopo alcuni secondi terminare la regolazione, premendo il tasto "PLAY" sul frontale (vedere paragrafo 2.3.6 relativo alle regolazioni elettriche).

1.2.3 Regolazione Clock a 16MHz

Questa regolazione serve a compensare la tolleranza del quarzo a 16MHz; il dato di compensazione che ne deriva viene memorizzato nella EEPROM.
La regolazione viene eseguita confrontando la frequenza del Clock a 16MHz con la frequenza del segnale di sincronismo video. Il dato di compensazione sarà memorizzato nella EEPROM.
Collegare il segnale d'antenna in ingresso e sintonizzarsi su un canale PAL o SECAM, con frequenza di riga a 50Hz. In assenza di cassetta, premere contemporaneamente i tasti "+", "-" e "PLAY" (oppure i tasti "STOP", "STBY" e "PLAY" per i modelli privi dei tasti "+" e "-"). Il display indicherà "ADJ"; ciò significa che la procdura di regolazione è stata attivata. Attendere circa 30 secondi per il calcolo e la memorizzazione del valore della regolazione nella EEPROM.
Terminare la regolazione inserendo una cassetta, quindi espellerla.

Importante:
I valori di queste regolazioni sono memorizzati nella EEPROM IT004. In caso di sostituzione della memoria, é necessario reinserire il valore d'impostazione corrispondente al riferimento commerciale, regolare il punto di commutazione delle testine video e il Clock a 16MHz.

1.3 Tempo di funzionamento

Il tempo di funzionamento viene indicato in ore nella pagina del Service Mode "Service Counter".

1.4 Autodiagnosi (solo per modelli disponibili in Gran Bretagna)

In caso di guasto meccanico o in seguito a un errore di manipolazione, viene memorizzato nella EEPROM un numero di 10 cifre corrispondente al guasto rlevato. Dall'analisi delle 10 cifre visualizzate, si può risalire alla causa del guasto.

1.4.1 Visualizzazione del messaggio di errore

Al messagio di errore si accede:
a) dalla prima pagina del "SERVICE SET UP", premendo il tasto avanzamento veloce ">>" del telecommando.
b) in STOP o in STBY, in assenza di informazioni OSD sul televisore, premendo il tasto ERASE per 10 secondi.

1.4.2 Interpretazione dei messaggi di errore

Il significato dei numeri che compongono il messaggio di errore è illustrato nella seguente tabella.

Numero di cifre	Significato	Valore
1 e 2	Funzione richiesta e posizione meccanica al momento dell'anomalia	1 - Av. e Rit veloce 2 - Stop 3 - Standby 3 - Riproduzione 4 - Ricerca indietro 5 - Caricamento/Scaricare 6 - Off 7 - Espulsione F - Inizializzazione
3 e 4	Compito che sta svolgendo il circuito Servo (μP)	00 - Stop 01 - Riavvolgimento 02 - Avvolgimento 04 - Riproduzione 11 - Ricerca indietro 12 - Ricerca avanti 44 - Registrazione 84 - Fermo immagine C4 - Pausa di registrator 40 - Registrazione / Pausa registrazione 10 - Ricerca
5,6,7 e 8	Funzione in corso prima dell'anomalia	bit 0
	Normale	0 0 0 0
	Registrazione	0 0 0 1
	Avanzamento sequenziale	0 0 0 4
	Off	0 0 0 8
	Espulsione	0 0 1 0
	Stop	0 0 2 0
	Capstan frenato	0 0 4 0
	Inizializzazione	0 0 8 0
	Registrazione continua	0 2 0 0
	Riproduzione continua	0 4 0 0
	Reg. o Ripr. continua	0 8 0 0
	Avanzamento o Riavvolgimento	1 0 0 0
	Ricerca	2 0 0 0
	Fermo immagine	4 0 0 0
	Riproduzione	8 0 0 0
9 e 10	Indicazione anomalia	81 - Motore tamburo testine 82 - Bobina svolgimento 84 - Bobina avvolgimento 88 - Funzione incompleta

2.4. RF/IF Signal processing (Main Board) - Traitement HF/FI (Platine Principale) - HF/ZF signalverarbeitung - Elaborazione segnale HF/FI - Tratamiento RF/FI

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.4.1.	31,9MHz TRAP	Apply a signal of 31,9 MHz with 15mV output level to IF input (pin13 of tuner).Standard Pal B/G.	Spectrum Analyser	FI010 pin1	Align FI002 for minimum 31,9MHz signal. Attenuation of trap wrt 37MHz ≥15dB.
2.4.2.	40,4MHz TRAP	Apply a signal of 40,4 MHz with 15mV output level to IF input(pin13 of tuner).Standard Pal B/G.	Spectrum Analyser	FI010 pin1	Align FI001 for minimum 40,4MHz signal. Attenuation of trap wrt 37MHz ≥15dB.
2.4.3.	Video reference filter	Apply a signal of 38,9 MHz with 20mV output level to IF input(pin13 of tuner).Standard Pal B/G.	DC voltmeter	II050 pin17	Adjust Reference Filter FI030 for 2,5V DC ±0,1V
2.4.4.	AGC	Apply a RF signal of 203,25MHz at 3mV_{rms} output level without modulation to Tuner Antenna input.	Spectrum Analyser	Tuner pin 13	Adjust AGC potentiometer (PI050) so that it is -10dB ±2dB attenuation from the maximum output level.

2.5. Video signal processing (Main board) - Traitement video (platine principale) - Video Signalteil - Elaborazione segnale video - Tratamiento video

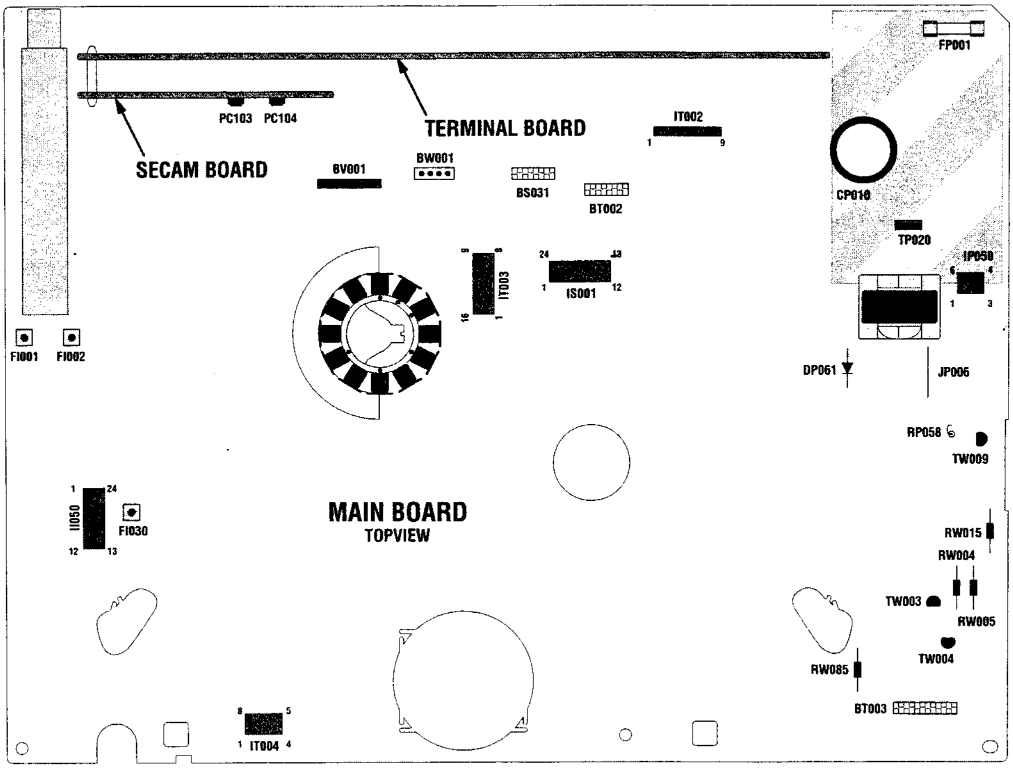
N°	Item	Mode & Signal	Test equipment	Test point	Description
2.5.1.	CVBS EE Level	Apply a PAL grey scale (1Vpp) to BX003 pin8	Oscilloscope	BX003 pin6	Check for 2Vpp ±0,1 Burst = 600mVpp ±80
	For models with SECAM and MESECAM	Repeat with Secam colour bar			Magenta bar = 420mVpp ±40
2.5.2.	FM Record level	Select PAL record mode without signal	Oscilloscope	TV008 emitter	Check for 200mVpp ±3dB
2.5.3.	Chroma Playback Level	Select PB mode and apply a PAL FM modulated with colour bar to BV001 pin8	Oscilloscope	BX003 pin6	Pal burst = 420mVpp ±80
	Models with SECAM	Repeat with Secam FM signal modulated with full field magenta			Magenta bar = 360mV ±50
	Just for SECAM models (Secam Board)				
2.5.4.	Anti Bell filter 1,0715MHz	Apply a Secam full field magenta colour to BC100 pin7	Oscilloscope	IC100 pin28	Adjust PC103 such that the magenta signal in R-Y and B-Y have the same amplitude
2.5.5.	Bell filter 4,286MHz	Apply a Secam full field magenta colour to BC100 pin7	Oscilloscope	IC100 pin26	Adjust PC104 such that the magenta signal in R-Y and B-Y have the same amplitude

2.6. Audio signal processing (Main board) - Traitement audio (Platine principale) - Audio Signalverarbeitung - Elaborazione segnale audio - Procesamiento audio

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.6.1	Bias oscillator frequency & level	REC (without signal)	Oscilloscope	BS030 pin1-2	Check for 70KHz±7KHz 40Vpp±10V
2.6.2	Bias current	REC (without signal)	Oscilloscope	IS001 pin17-7	Check for 1.3Vpp±0.2V (~) 460±50mVrms $I = V_{PIN17(VRMS)}/(RS012+RS013)\Omega$

2. Electrical adjustments - Réglages électriques - Elektrische Einstellungen - Regolazioni elettriche - Ajustes eléctricos

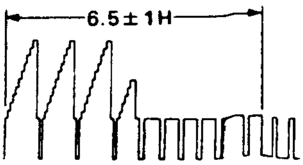
2.1. Test points and adjustment overview -Emplacement des points test et des réglages - Testpunkt- und Abgleich-Übersicht - Punto test e panoramicageneral delle regolazioni - Punto de prueba y emplazamientos de los ajustes


FP001
PC103
PC104
TERMINAL BOARD
IT002
SECAM BOARD
BV001
BW001
BS031
BT002
CP010
TP020
IT003
IS001
IP050
FI001
FI002
DP061
JP006
RP058
TW009
II050
FI030
MAIN BOARD
TOPVIEW
RW015
RW004
TW003
RW005
TW004
RW085
BT003
IT004

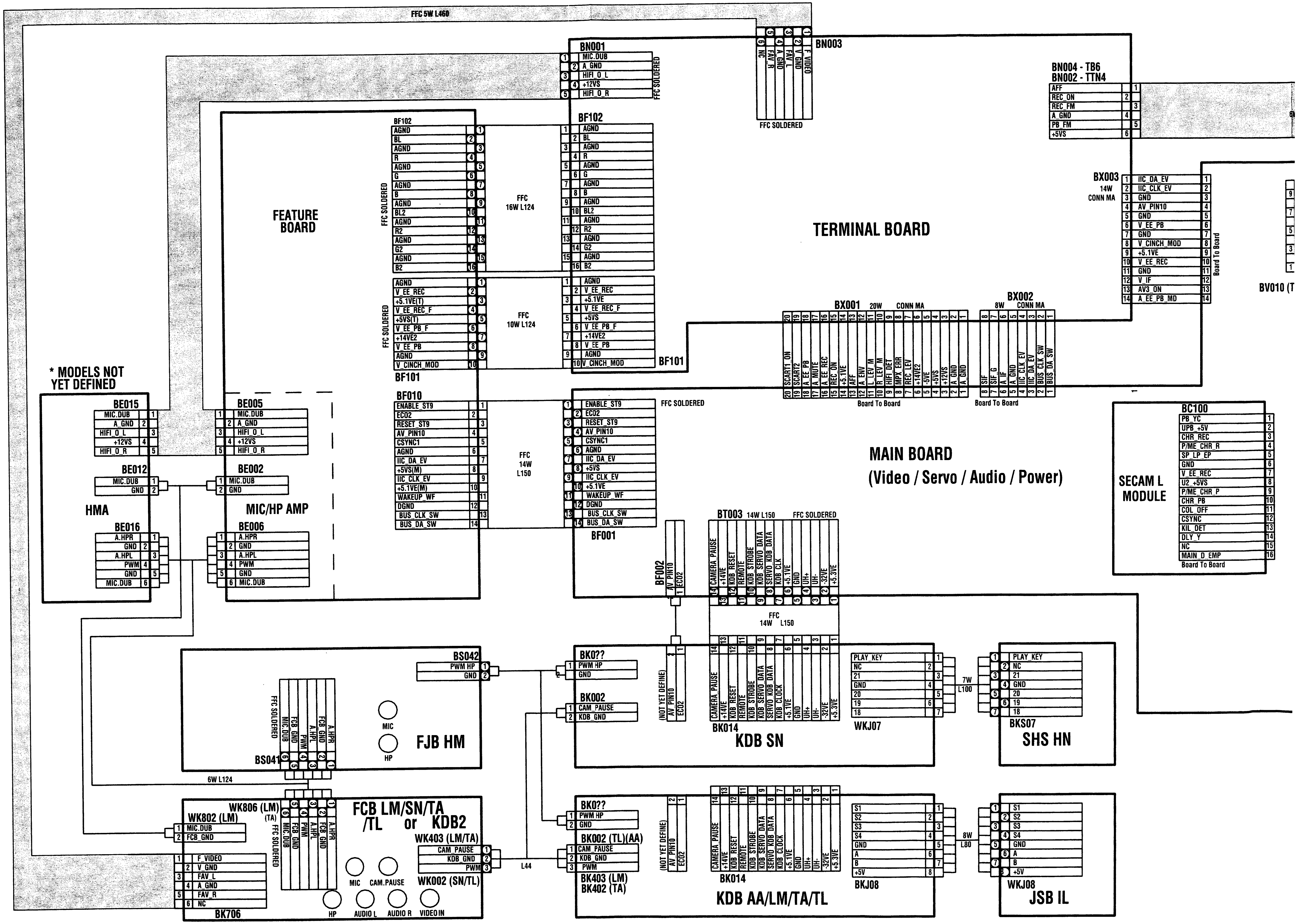
2.2. On screen display (Main board) - OSD: Affichage sur l'écran (platine principale) - OSD: Hauptleiterplatte - OSD: Visualizzazione su Schermo - OSD: Visualización en la pantalla

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.2.1	OSD chroma oscillator		Frequency counter	RT103	Check for 17.734475MHz±650Hz

2.3. Measurements Servo Section (Main Board) - Vérifications sur les circuits d'asservissements - Messungen Servoteil - Controlli parte Servo - Verificaciones para parte Servo

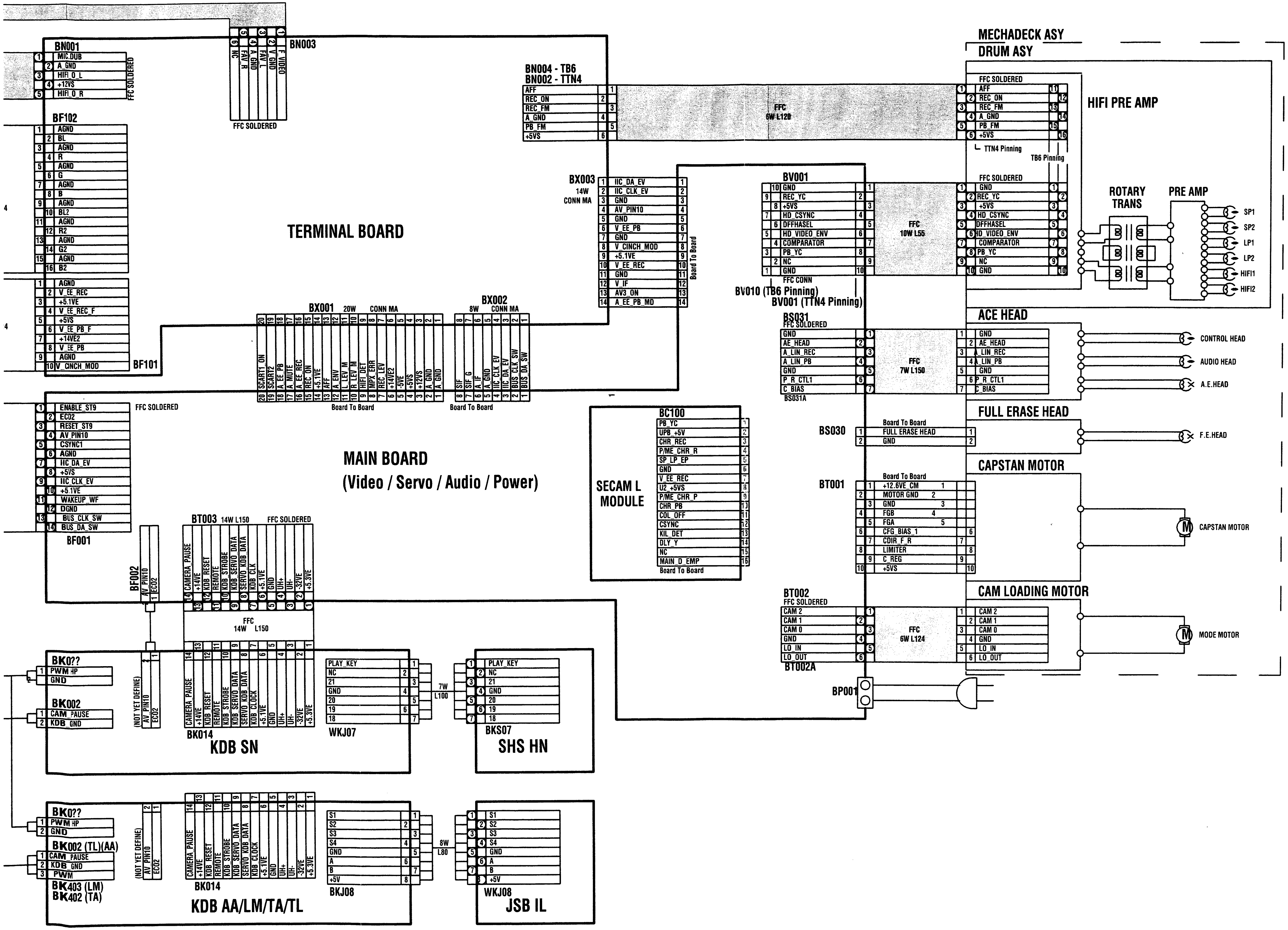
N°	Item	Mode & Signal	Test equipment	Test point	Description
2.3.1	Oscillator frequency		Frequency counter	IT001 pin 63	Check for 8.0MHz±1250Hz
2.3.2	5V Regulated		Voltmeter	IT001 pin 64	Check for 5.1V±0.3V
2.3.3	Drum FF	PB /REC (SP)	Frequency counter	IT001 pin 89	Check for 40ms±10µs
2.3.4	Capstan FG	PB /REC (SP)	Frequency counter	IT001 pin 44	Check for f= 757Hz±10Hz
2.3.5	CTL signal	PB /REC (SP)	Oscilloscope	IT001 pin 46	Check for f= 25Hz, U= 5Vpp
2.3.6	Head switching point	PB	Dual trace Oscilloscope Trigger ext. BW001 (Drum FF)	BX001 pin 19	1. Insert alignment test cassette. 2. When the display shows «PLAY E----» press the STATUS key on remote control. 3. Press «+» , «-» and «PLAY». 4. Display shows «ADJ». 5. Confirm that head switching point is 6.5 H ± 0.5H before vert. synchro. 6. Stop the adjustment by pressing
Play key on the front panel.					

WIRING DIAGRAM - SCHEMA D'INTERCONNECTIONS - VERDRAHTUNGSPLAN - DIAGRAMMA DELLE INTERCONNESSIONI - ESQUEMA DE INTERCONEXIONES



FFC 5W L460
BN001
MIC.DUB
A_GND
HIFI_O_L
+12VS
HIFI_O_R
FFC SOLDERED
BN003
F_VIDEO
V_GND
FAV_L
A_GND
FAV_R
NC
FFC SOLDERED
BN004 - TB6
BN002 - TTN4
AFF
REC_ON
REC_FM
A_GND
PB_FM
+5VS
BF102
AGND
BL
R
G
B
BL2
R2
G2
B2
FFC 16W L124
FFC SOLDERED
FEATURE BOARD
V_EE_REC
+5.1VE(T)
V_EE_REC_F
+5VS(T)
V_EE_PB_F
+14VE2
V_EE_PB
V_CINCH_MOD
FFC 10W L124
BF101
TERMINAL BOARD
BX003
14W
CONN MA
IIC_DA_EV
IIC_CLK_EV
GND
AV_PIN10
V_EE_PB
V_CINCH_MOD
+5.1VE
V_EE_REC
V_IF
AV3_ON
A_EE_PB_MD
Board To Board
BV010 (T
BX001 20W CONN MA
SCART1_ON
SCART2
A_EE_PB
A_MUTE
A_EE_REC
REC_ON
+5.1VE
AFF
A_ENV
L_LEV_M
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE2
-5VE
+5VS
+12VS
A_GND
Board To Board
BX002 8W CONN MA
SIF
SIF_G
A_IF
A_GND
IIC_CLK_EV
IIC_DA_EV
BUS_CLK_SW
BUS_DA_SW
Board To Board
* MODELS NOT YET DEFINED
BE015
BE005
BE012
BE002
HMA
MIC/HP AMP
BE016
BE006
A.HPR
GND
A.HPL
PWM
MIC.DUB
BF010
ENABLE_ST9
ECO2
RESET_ST9
AV_PIN10
CSYNC1
AGND
IIC_DA_EV
+5VS(M)
IIC_CLK_EV
+5.1VE(M)
WAKEUP_WF
DGND
BUS_CLK_SW
BUS_DA_SW
FFC 14W L150
FFC SOLDERED
BF001
MAIN BOARD
(Video / Servo / Audio / Power)
SECAM L MODULE
BC100
PB_YC
UPB_+5V
CHR_REC
P/ME_CHR_R
SP_LP_EP
GND
V_EE_REC
U2_+5VS
P/ME_CHR_P
CHR_PB
COL_OFF
CSYNC
KIL_DET
DLY_Y
NC
MAIN_D_EMP
Board To Board
BT003 14W L150 FFC SOLDERED
BF002
AV_PIN10
ECO2
CAMERA_PAUSE
+14VE
KDB_RESET
REMOTE
KDB_STROBE
KDB_SERVO_DATA
SERVO_KDB_DATA
KDB_CLK
KDB_CLOCK
+5.1VE
UH+
UH-
-32VE
+5.3VE
FFC 14W L150
BS042
PWM HP
GND
FFC SOLDERED
BS041
A.HPR
FCB_GND
A.HPL
PWM
MIC.DUB
MIC
HP
FJB HM
6W L124
BK0??
BK002
CAM_PAUSE
KDB_GND
(NOT YET DEFINE)
BK014
KDB SN
PLAY_KEY
NC
21
20
19
18
WKJ07
7W L100
BKS07
SHS HN
WK806 (LM)
(TA)
WK802 (LM)
FCB LM/SN/TA /TL or KDB2
WK403 (LM/TA)
CAM_PAUSE
KDB_GND
PWM
WK002 (SN/TL)
F_VIDEO
V_GND
FAV_L
A_GND
FAV_R
NC
BK706
MIC
CAM.PAUSE
HP
AUDIO L
AUDIO R
VIDEO IN
L44
BK002 (TL)(AA)
BK403 (LM)
BK402 (TA)
KDB AA/LM/TA/TL
S1
S2
S3
S4
A
B
+5V
BKJ08
8W L80
WKJ08
JSB IL

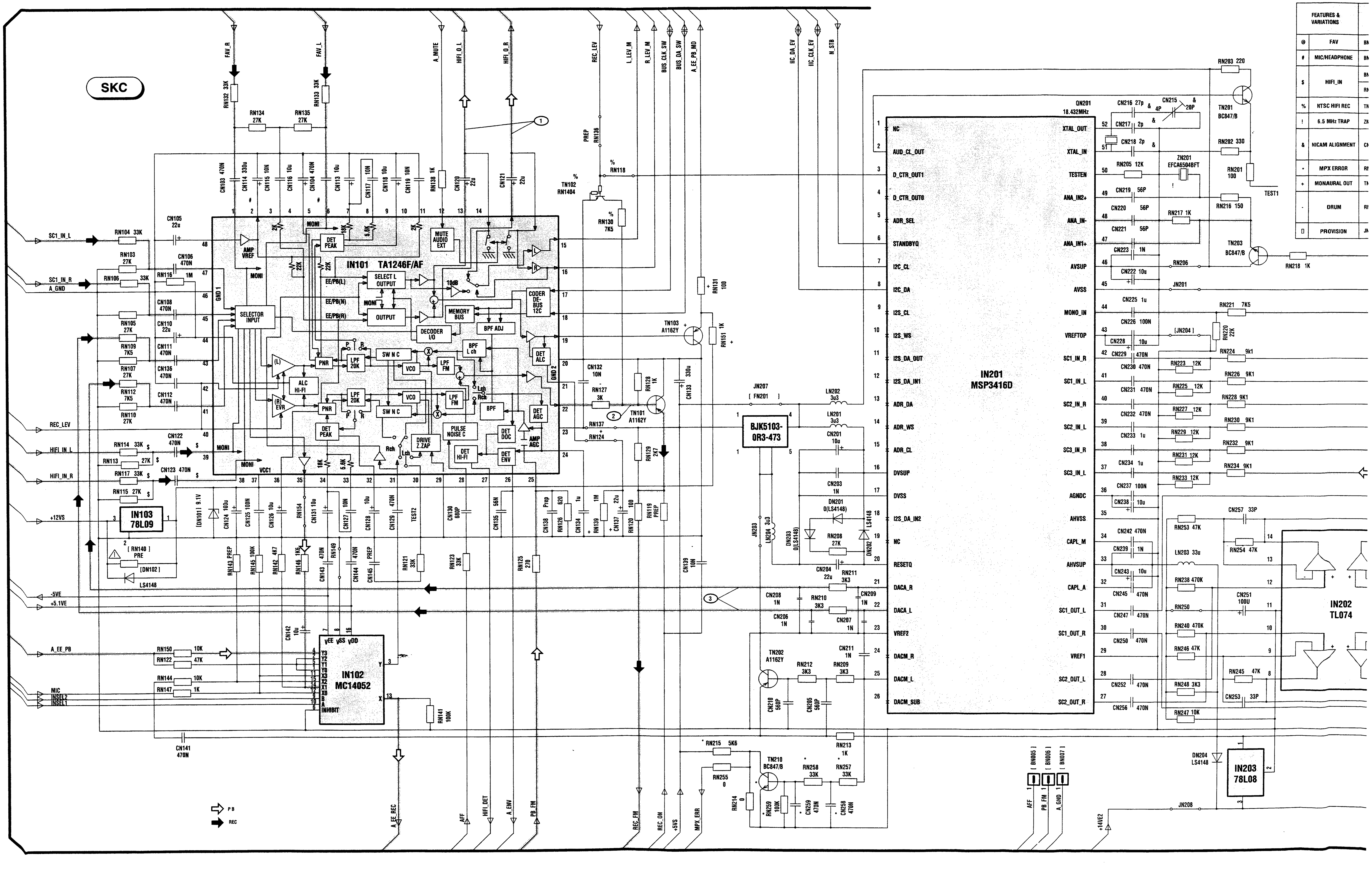
GSPLAN - DIAGRAMMA DELLE INTERCONNESSIONI -



TERMINAL BOARD
MAIN BOARD
(Video / Servo / Audio / Power)
SECAM L MODULE
MECHADECK ASY
DRUM ASY
HIFI PRE AMP
ROTARY TRANS
PRE AMP
SP1
SP2
LP1
LP2
HIFI1
HIFI2
ACE HEAD
CONTROL HEAD
AUDIO HEAD
A.E.HEAD
FULL ERASE HEAD
F.E.HEAD
CAPSTAN MOTOR
CAM LOADING MOTOR
MODE MOTOR
KDB SN
SHS HN
KDB AA/LM/TA/TL
JSB IL
BN001
MIC.DUB
A_GND
HIFI_O_L
+12VS
HIFI_O_R
FFC SOLDERED
BF102
AGND
BL
R
G
B
BL2
R2
G2
B2
V_EE_REC
+5.1VE
V_EE_REC_F
+5VS
V_EE_PB_F
+14VE2
V_EE_PB
V_CINCH_MOD
BF101
BN003
NC
FAV_R
A_GND
FAV_L
V_GND
F_VIDEO
BN004 - TB6
BN002 - TTN4
AFF
REC_ON
REC_FM
PB_FM
FFC 6W L120
TTN4 Pinning
TB6 Pinning
BX003
14W
CONN MA
IIC_DA_EV
IIC_CLK_EV
GND
AV_PIN10
V_EE_PB
V_CINCH_MOD
+5.1VE
V_EE_REC
V_IF
AV3_ON
A_EE_PB_MD
Board To Board
BX001 20W CONN MA
SCART1_ON
SCART2
A_EE_PB
A_MUTE
A_EE_REC
A_REC_ON
+5.1VE
AFF
A_ENV
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE2
-5VE
+5VS
+12VS
A_GND
BX002 8W CONN MA
SIF
SIF_G
A_IF
IIC_CLK_EV
IIC_DA_EV
BUS_CLK_SW
BUS_DA_SW
BV001
REC_YC
HD_CSYNC
DFFHASEL
HD_VIDEO_ENV
COMPARATOR
PB_YC
FFC CONN
FFC 10W L55
BV010 (TB6 Pinning)
BV001 (TTN4 Pinning)
BS031
AE_HEAD
A_LIN_REC
A_LIN_PB
P_R_CTL1
C_BIAS
BS031A
FFC 7W L150
BS030
FULL ERASE HEAD
BT001
+12.6VE_CM
MOTOR GND
FGB
FGA
CFG_BIAS_1
CDIR_F_R
LIMITER
C_REG
BT002
CAM 2
CAM 1
CAM 0
LO_IN
LO_OUT
BT002A
FFC 6W L124
BP001
BC100
UPB_+5V
CHR_REC
P/ME_CHR_R
SP_LP_EP
U2_+5VS
P/ME_CHR_P
CHR_PB
COL_OFF
CSYNC
KIL_DET
DLY_Y
MAIN_D_EMP
BF001
ENABLE_ST9
EC02
RESET_ST9
CSYNC1
IIC_CLK_EV
WAKEUP_WF
DGND
BUS_CLK_SW
BUS_DA_SW
BF002
BT003 14W L150
CAMERA_PAUSE
+14VE
KDB_RESET
REMOTE
KDB_STROBE
KDB_SERVO_DATA
SERVO_KDB_DATA
KDB_CLK
UH+
UH-
-32VE
+5.3VE
FFC 14W L150
BK0??
PWM HP
BK002
CAM_PAUSE
KDB_GND
(NOT YET DEFINE)
BK014
PLAY_KEY
WKJ07
7W L100
BKS07
BK002 (TL)(AA)
PWM
BK403 (LM)
BK402 (TA)
S1
S2
S3
S4
+5V
BKJ08
8W L80
WKJ08

AUDIO HIFI / SCART CONNECTION BOARD - PLATINE AUDIO HIFI / PRISES SCART - LEITERPLATTE AUDIO HIFI / SCART - PIASTRA AUDIO HIFI / SCART - PLATINA

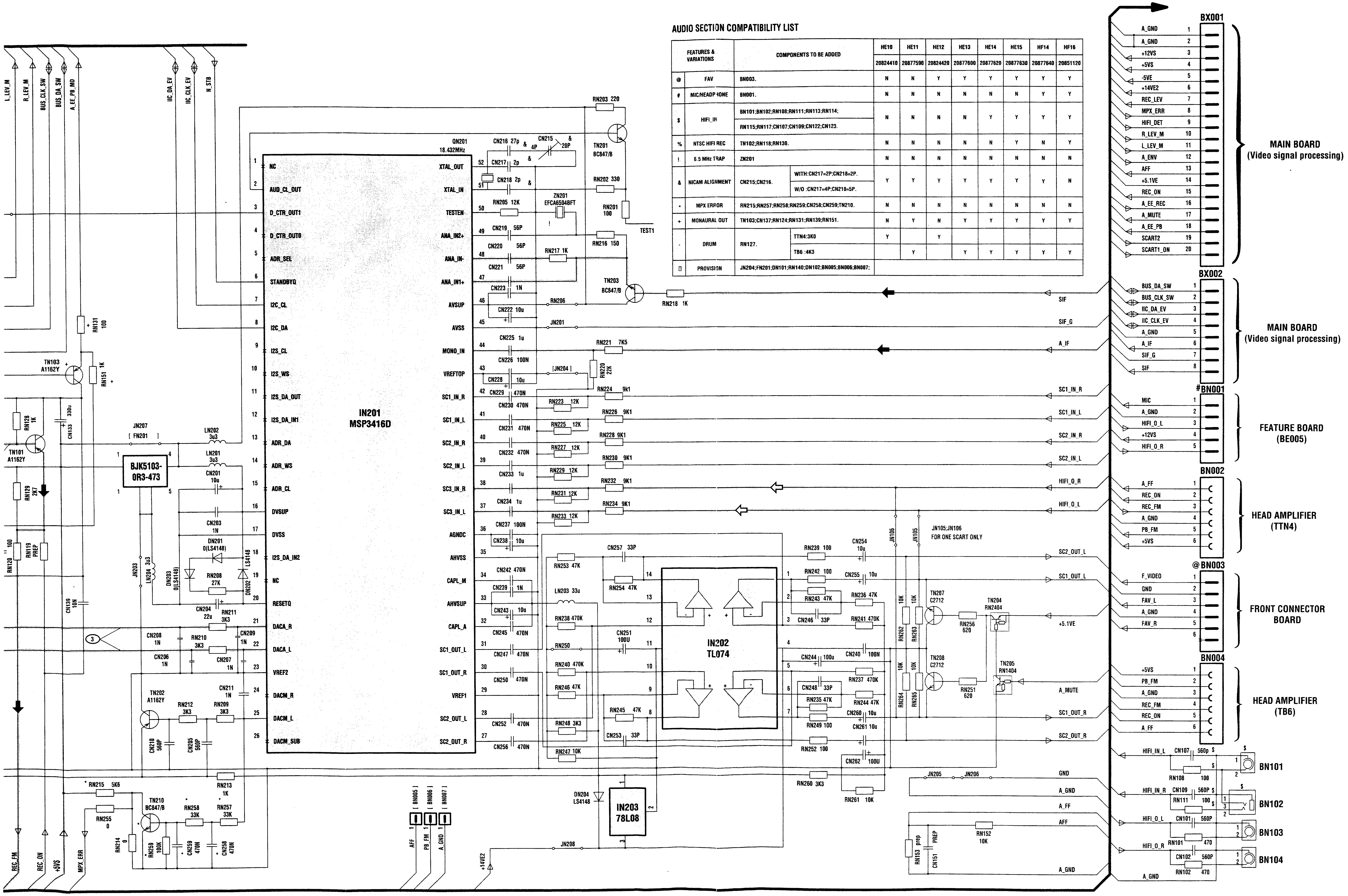
SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


SKC
FAV_R
FAV_L
A_MUTE
HIFI_O_L
HIFI_O_R
REC_LEV
L_LEV_M
R_LEV_M
BUS_CLK_SW
BUS_DA_SW
A_EE_PB_MD
IIC_DA_EV
IIC_CLK_EV
N_STB
SC1_IN_L
SC1_IN_R
A_GND
REC_LEV
HIFI_IN_L
HIFI_IN_R
+12VS
-5VE
+5.1VE
A_EE_PB
MIC
INSEL2
INSEL1
IN101 TA1246F/AF
SELECTOR INPUT
AMP VREF
DET PEAK
MUTE AUDIO EXT
SELECT L OUTPUT
OUTPUT
MEMORY BUS
DECODER I/O
BPF ADJ
CODER DE-BUS I2C
DET ALC
ALC HI-FI
PNR
LPF 20K
SW N C
VCO
LPF FM
BPF L ch
BPF
DET AGC
PULSE NOISE C
DRIVE Z.ZAP
DET HI-FI
DET DOC
DET ENV
AMP AGC
IN103 78L09
IN102 MC14052
IN201 MSP3416D
BJK5103-0R3-473
IN202 TL074
IN203 78L08
QN201 18.432MHz
ZN201 EFCA6504BFT
TN101 A1162Y
TN102 RN1404
TN103 A1162Y
TN201 BC847/B
TN202 A1162Y
TN203 BC847/B
TN210 BC847/B
NC
AUD_CL_OUT
D_CTR_OUT1
D_CTR_OUT0
ADR_SEL
STANDBYQ
I2C_CL
I2C_DA
I2S_CL
I2S_WS
I2S_DA_OUT
I2S_DA_IN1
ADR_DA
ADR_WS
ADR_CL
DVSUP
DVSS
I2S_DA_IN2
NC
RESETQ
DACA_R
DACA_L
VREF2
DACM_R
DACM_L
DACM_SUB
XTAL_OUT
XTAL_IN
TESTEN
ANA_IN2+
ANA_IN-
ANA_IN1+
AVSUP
AVSS
MONO_IN
VREFTOP
SC1_IN_R
SC1_IN_L
SC2_IN_R
SC2_IN_L
SC3_IN_R
SC3_IN_L
AGNDC
AHVSS
CAPL_M
AHVSUP
CAPL_A
SC1_OUT_L
SC1_OUT_R
VREF1
SC2_OUT_L
SC2_OUT_R
TEST1
JN207 [FN201]
JN208
A_EE_REC
AFF
HIFI_DET
A_ENV
PB_FM
REC_FM
REC_ON
+5VS
MPX_ERR
AFF
PB_FM
A_GND
+14VE2
[BN005]
[BN006]
[BN007]
PB
REC

AUDIO SECTION COMI

FEATURES & VARIATIONS		
@	FAV	BN
#	MIC/HEADPHONE	BN
$	HIFI_IN	BN RN
%	NTSC HIFI REC	TN
!	6.5 MHz TRAP	ZN
&	NICAM ALIGNMENT	CN
*	MPX ERROR	RN
+	MONAURAL OUT	TN
-	DRUM	RN
▯	PROVISION	JN

SCART - LEITERPLATTE AUDIO HIFI / SCART - PIASTRA AUDIO HIFI / SCART - PLATINA AUDIO HIFI / SCART



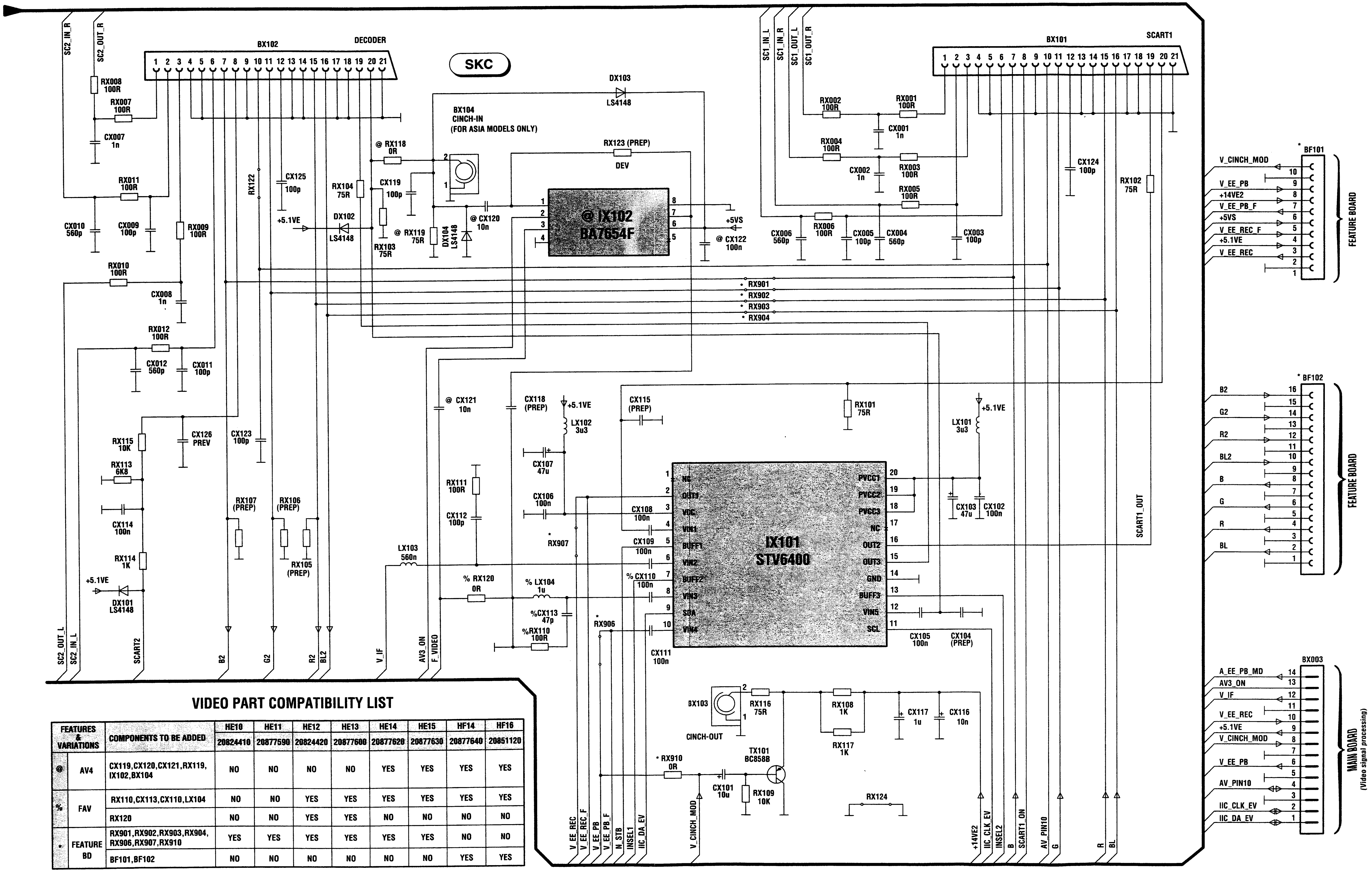
L_LEV_M
R_LEV_M
BUS_CLK_SW
BUS_DA_SW
A_EE_PB_MD
IIC_DA_EV
IIC_CLK_EV
N_STB
IN201
MSP3416D
QN201 18.432MHz
IN202
TL074
IN203
78L08
BJK5103-0R3-473
TN101 A1162Y
TN103 A1162Y
TN201 BC847/B
TN202 A1162Y
TN203 BC847/B
TN207 C2712
TN208 C2712
TN204 RN2404
TN205 RN1404
TN210 BC847/B
ZN201 EFCA6504BFT
DN204 LS4148
TEST1
JN105;JN106 FOR ONE SCART ONLY
REC_FM
REC_ON
+5VS
MPX_ERR
AFF
PB_FM
A_GND
+14VE2
BX001
MAIN BOARD (Video signal processing)
BX002
MAIN BOARD (Video signal processing)
#BN001
FEATURE BOARD (BE005)
BN002
HEAD AMPLIFIER (TTN4)
@BN003
FRONT CONNECTOR BOARD
BN004
HEAD AMPLIFIER (TB6)
BN101
BN102
BN103
BN104

AUDIO SECTION COMPATIBILITY LIST

	FEATURES & VARIATIONS	COMPONENTS TO BE ADDED		HE10	HE11	HE12	HE13	HE14	HE15	HF14	HF16
				20824410	20877590	20824420	20877600	20877620	20877630	20877640	20851120
@	FAV	BN003.		N	N	Y	Y	Y	Y	Y	Y
#	MIC/HEADPHONE	BN001.		N	N	N	N	N	N	Y	Y
$	HIFI_IN	BN101;BN102;RN108;RN111;RN113;RN114; RN115;RN117;CN107;CN109;CN122;CN123.		N	N	N	N	Y	Y	Y	Y
%	NTSC HIFI REC	TN102;RN118;RN130.		N	N	N	N	N	Y	N	Y
!	6.5 MHz TRAP	ZN201		N	N	N	N	N	N	N	N
&	NICAM ALIGNMENT	CN215;CN216.	WITH:CN217=2P;CN218=2P. W/O :CN217=4P;CN218=5P.	Y	Y	Y	Y	Y	Y	Y	N
*	MPX ERROR	RN215;RN257;RN258;RN259;CN258;CN259;TN210.		N	N	N	N	N	N	N	N
+	MONAURAL OUT	TN103;CN137;RN124;RN131;RN139;RN151.		N	Y	N	Y	Y	Y	Y	Y
-	DRUM	RN127.	TTN4:3K0	Y		Y					
			TB6 :4K3		Y		Y	Y	Y	Y	Y
[]	PROVISION	JN204;FN201;DN101;RN140;DN102;BN005;BN006;BN007;									

AUDIO HIFI / SCART CONNECTION BOARD - PLATINE AUDIO HIFI / PRISES SCART - LEITERPLATTE AUDIO HIFI / SCART - PIASTRA AUDIO HIFI / SCART - PLATINA AUDIO HIFI / SCART

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


SC2_IN_R
SC2_OUT_R
BX102
DECODER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
SKC
RX008 100R
RX007 100R
CX007 1n
RX011 100R
CX010 560p
CX009 100p
RX009 100R
RX010 100R
CX008 1n
RX012 100R
CX012 560p
CX011 100p
RX122
CX125 100p
RX104 75R
+5.1VE
DX102 LS4148
RX103 75R
@ RX118 0R
CX119 100p
@ RX119 75R
BX104 CINCH-IN (FOR ASIA MODELS ONLY)
DX104 LS4148
@ CX120 10n
DX103 LS4148
RX123 (PREP)
DEV
@ IX102 BA7654F
+5VS
@ CX122 100n
SC1_IN_L
SC1_IN_R
SC1_OUT_L
SC1_OUT_R
RX002 100R
RX001 100R
CX001 1n
RX004 100R
CX002 1n
RX003 100R
RX005 100R
CX006 560p
RX006 100R
CX005 100p
CX004 560p
CX003 100p
BX101
SCART1
CX124 100p
RX102 75R
* RX901
* RX902
* RX903
* RX904
RX115 10K
CX126 PREV
CX123 100p
RX113 6K8
CX114 100n
RX114 1K
+5.1VE
DX101 LS4148
RX107 (PREP)
RX106 (PREP)
RX105 (PREP)
LX103 560n
@ CX121 10n
RX111 100R
CX112 100p
% RX120 0R
CX118 (PREP)
LX102 3u3
CX107 47u
CX106 100n
* RX907
% LX104 1u
%CX113 47p
%RX110 100R
* RX906
CX115 (PREP)
CX108 100n
CX109 100n
% CX110 100n
CX111 100n
IX101 STV6400
NC
OUT1
VCC
VIN1
BUFF1
VIN2
BUFF2
VIN3
SDA
VIN4
PVCC1
PVCC2
PVCC3
NC
OUT2
OUT3
GND
BUFF3
VIN5
SCL
RX101 75R
LX101 3u3
+5.1VE
CX103 47u
CX102 100n
CX105 100n
CX104 (PREP)
SCART1_OUT
BX103
CINCH-OUT
RX116 75R
RX108 1K
RX117 1K
CX117 1u
CX116 10n
TX101 BC858B
* RX910 0R
CX101 10u
RX109 10K
RX124
SC2_OUT_L
SC2_IN_L
SCART2
B2
G2
R2
BL2
V_IF
AV3_ON
F_VIDEO
V_EE_REC
V_EE_REC_F
V_EE_PB
V_EE_PB_F
N_STB
INSEL1
IIC_DA_EV
V_CINCH_MOD
+14VE2
IIC_CLK_EV
INSEL2
B
SCART1_ON
AV_PIN10
G
R
BL
* BF101
V_CINCH_MOD
V_EE_PB
+14VE2
V_EE_PB_F
+5VS
V_EE_REC_F
+5.1VE
V_EE_REC
FEATURE BOARD
* BF102
B2
G2
R2
BL2
B
G
R
BL
FEATURE BOARD
BX003
A_EE_PB_MD
AV3_ON
V_IF
V_EE_REC
+5.1VE
V_CINCH_MOD
V_EE_PB
AV_PIN10
IIC_CLK_EV
IIC_DA_EV
MAIN BOARD
(Video signal processing)

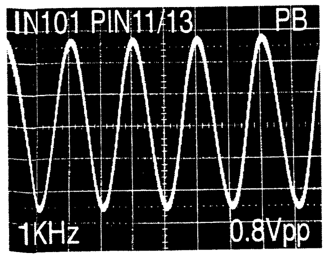
VIDEO PART COMPATIBILITY LIST

FEATURES & VARIATIONS		COMPONENTS TO BE ADDED	HE10	HE11	HE12	HE13	HE14	HE15	HF14	HF16
			20824410	20877590	20824420	20877600	20877620	20877630	20877640	20851120
@	AV4	CX119,CX120,CX121,RX119, IX102,BX104	NO	NO	NO	NO	YES	YES	YES	YES
%	FAV	RX110,CX113,CX110,LX104	NO	NO	YES	YES	YES	YES	YES	YES
		RX120	NO	NO	YES	YES	NO	NO	NO	NO
*	FEATURE BD	RX901,RX902,RX903,RX904, RX906,RX907,RX910	YES	YES	YES	YES	YES	YES	NO	NO
		BF101,BF102	NO	NO	NO	NO	NO	NO	YES	YES

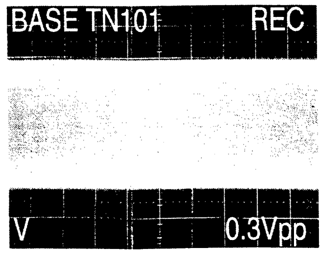
AUDIO HIFI / SCART CONNECTION BOARD - PLATINE AUDIO HIFI / PRISES SCART - LEITERPLATTE AUDIO HIFI / SCART - PIASTRA AUDIO HIFI / SCART - PLATINA AUDIO HIFI / SCART

MEASUREMENTS AUDIO HIFI / SCART CONNECTION - MESURES AUDIO HIFI / PRISES SCART - MESSUNGEN LEITERPLATTE AUDIO HIFI / SCART - MISURI AUDIO HIFI / SCART - MEDIDAS AUDIO HIFI / SCART

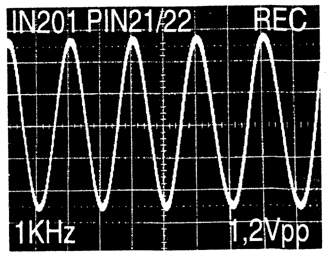
TMB		MODE		
LOC	PIN	EE	PLAY	REC.
IN101	1	4,4	4,3	4,4
	2	4,4	4,4	4,4
	3	4,4	4,4	4,4
	4	4,4	4,4	4,4
	5	4,4	4,4	4,4
	6	4,4	4,4	4,4
	7	4,4	4,4	4,4
	8	0,9	0,9	0,9
	9	4,4	4,4	4,4
	10	0	0	0
	11	4,4	4,4	4,4
	12	0	0	0
	13	4,4	4,4	4,4
	14	0	0	0
	15	3,7	3,7	3,7
	16	3,7	3,7	3,7
	17	4	4	4
	18	3,9	3,9	3,9
	19	4,4	4,4	4,4
	20	0	0	0
	21	0,8	0,6	0,8
	22	0	0	0
	23	5	5	5
	24	0,3	1,6	0,3
	25	1,2	1,2	1,2
	26	0	3,5	0
	27	0	0	0
	28	4,4	4,4	4,4
	29	0	0	0
	30	2,3	0,8	2,3
	31	4,4	4,4	4,4
	32	0,8	0,8	0,8
	33	4,4	4,4	4,4
	34	4,4	4,4	4,4
	35	4,4	4,4	4,4
	36	4,4	4,4	4,4
	37	8,9	8,9	8,9
	38	4,4	4,4	4,4
	39	4,4	4,4	4,4
	40	1,7	1,7	1,7
	41	4,4	4,4	4,4
	42	1,7	1,7	1,7
	43	4,4	4,4	4,4
	44	0	0,3	0
	45	4,4	4,4	4,4
	46	0	0	0
	47	4,4	4,4	4,4
	48	4,4	4,4	4,4
IN201	1	NC	NC	NC
	2	1,3	1,3	1,3
	3	0	0	0
	4	NC	NC	NC
	5	NC	NC	NC
	6	5	5	5
	7	4,8	4,8	4,8
	8	4,5	4,5	4,5
	9	NC	NC	NC
	10	NC	NC	NC
	11	NC	NC	NC
	12	NC	NC	NC
	13	NC	NC	NC
	14	NC	NC	NC
	15	NC	NC	NC
	16	5	5	5
	17	0	0	0
	18	NC	NC	NC
	19	NC	NC	NC
	20	5	5	5
	21	1,8	1,8	1,8
	22	1,8	1,8	1,8
	23	0	0	0
	24	NC	NC	NC
	25	2,1	2,1	2,1
	26	NC	NC	NC
	27	3,7	3,7	3,7
	28	3,7	3,7	3,7
	29	0	0	0
	30	3,7	3,7	3,7
	31	3,7	3,7	3,7
	32	6,3	6,3	6,3
	33	8	8	8
	34	6,3	6,3	6,3
	35	0	0	0
	36	3,6	3,6	3,6
	37	3,6	3,6	3,6
	38	3,6	3,6	3,6
	39	3,6	3,6	3,6
	40	3,6	3,6	3,6
	41	3,6	3,6	3,6
	42	3,6	3,6	3,6
	43	2,5	2,5	2,5
	44	3,6	3,6	3,6
	45	0	0	0
	46	5	5	5
	47	0	0	0
	48	1,5	1,5	1,5
	49	1,5	1,5	1,5
	50	0	0	0
	51	2,3	2,3	2,3
	52	2,4	2,4	2,4
IX101	1	0	0	0
	2	1,1	0,7	1,1
	3	5,2	5,2	5,2
	4	1,7	1,7	1,7
	5	5	5	5
	6	1,7	1,7	1,7
	7	0	0	0
	8	1,4	1,4	1,4
	9	4,5	4,5	4,5
	10	2,3	2,3	2,3
	11	4,8	4,8	4,8
	12	1,4	1,4	1,4
	13	5	0	5
	14	0	0	0
	15	1,6	1,6	1,6
	16	1,7	1,7	1,7
	17	0	0	0
	18	5,2	5,2	5,2
	19	5,2	5,2	5,2
	20	5,2	5,2	5,2



①

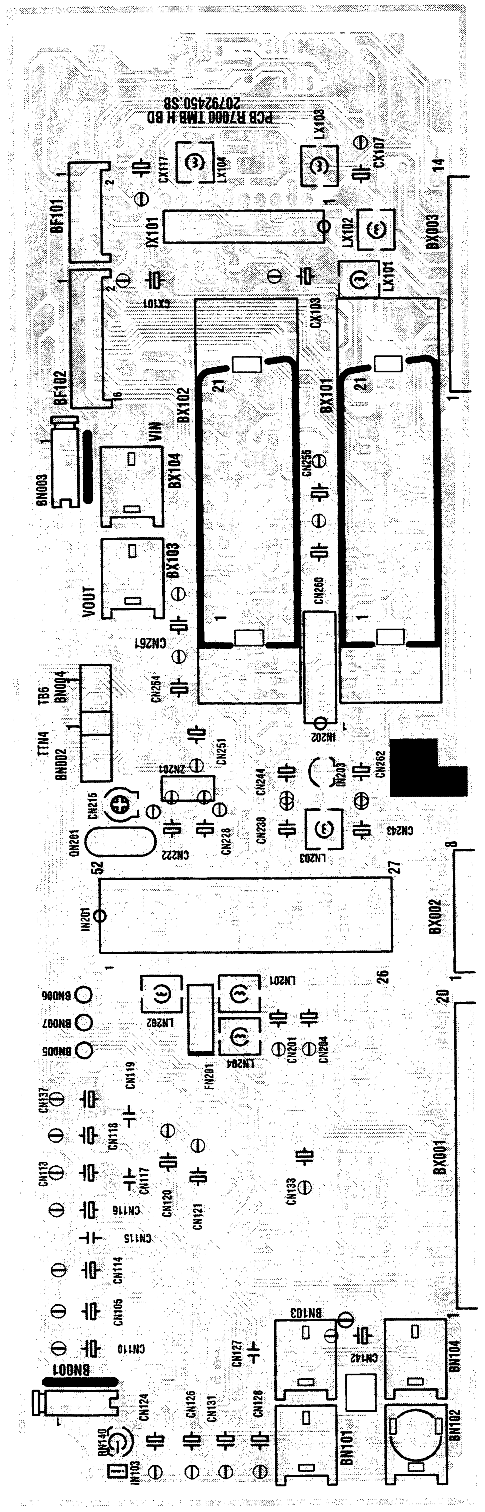


②

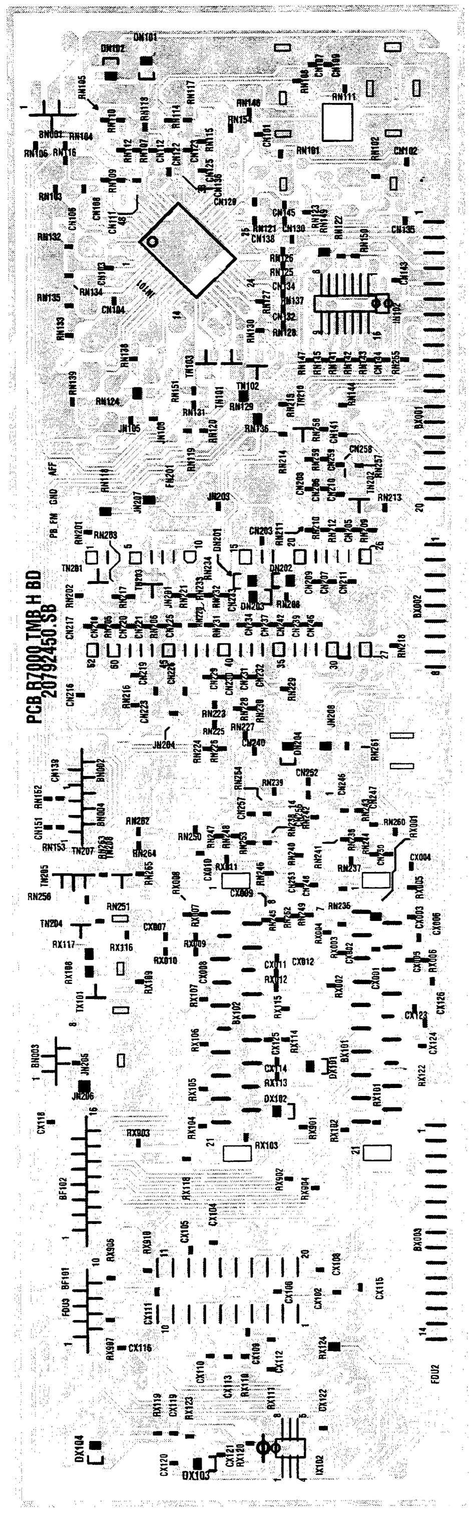


③

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

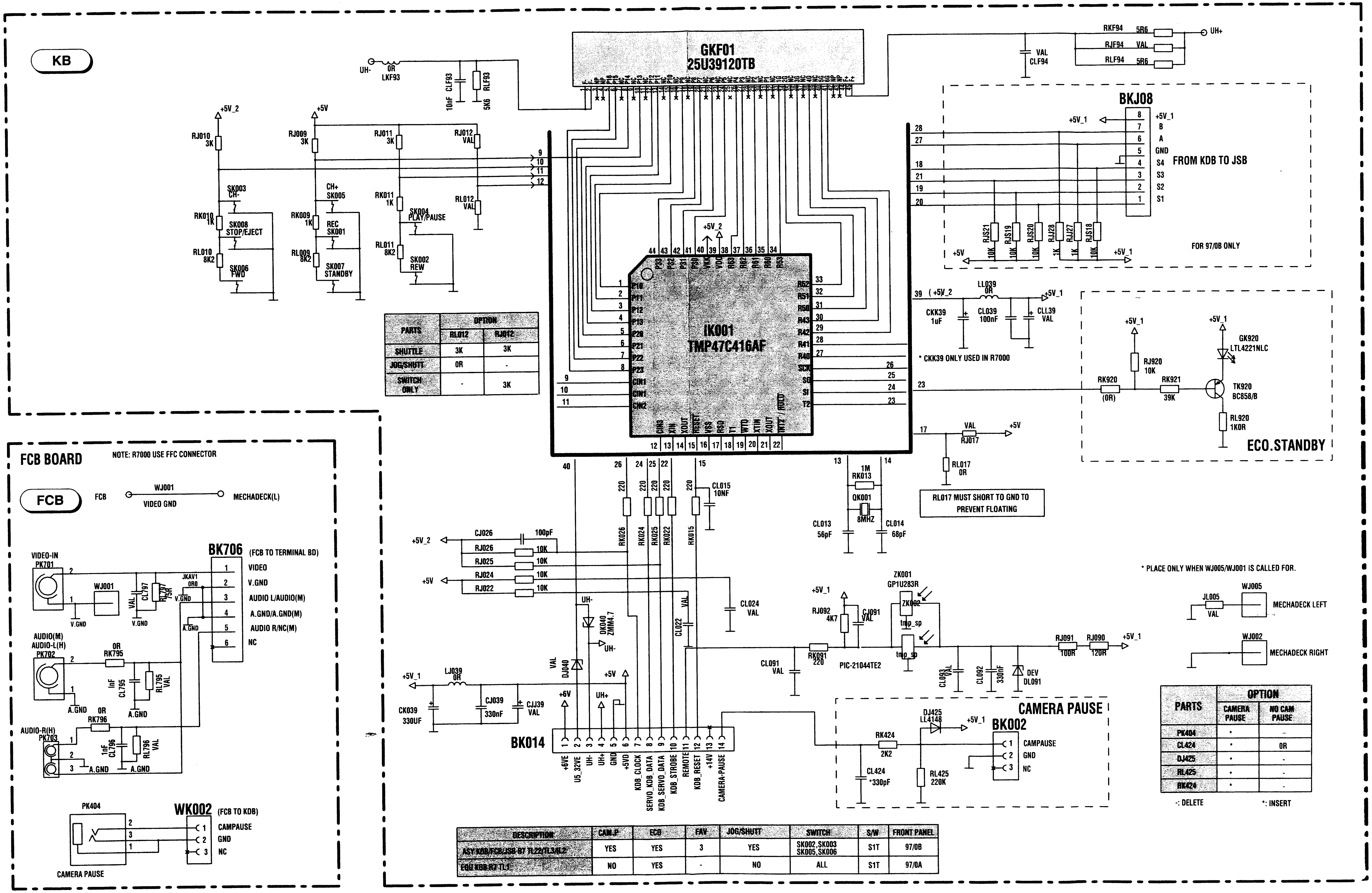


Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre



KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6800F - VPH6850F)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
GKF01
25U39120TB
IK001
TMP47C416AF
BKJ08
FROM KDB TO JSB
FOR 97/0B ONLY
ECO.STANDBY
GK920
LTL4221NLC
TK920
BC858/B
SK003 CH-
CH+ SK005
SK004 PLAY/PAUSE
SK008 STOP/EJECT
REC SK001
SK006 FWD
SK007 STANDBY
SK002 REW
QK001 8MHZ
ZK001 GP1U283R
PIC-21044TE2
CAMERA PAUSE
BK002
CAMPAUSE
GND
NC
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
WJ005
MECHADECK LEFT
WJ002
MECHADECK RIGHT
FCB BOARD
FCB
WJ001
VIDEO GND
MECHADECK(L)
BK706
(FCB TO TERMINAL BD)
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
VIDEO-IN PK701
AUDIO(M) AUDIO-L(H) PK702
AUDIO-R(H) PK703
PK404
WK002
(FCB TO KDB)
CAMERA PAUSE

NOTE: R7000 USE FFC CONNECTOR

* CKK39 ONLY USED IN R7000

RL017 MUST SHORT TO GND TO PREVENT FLOATING

* PLACE ONLY WHEN WJ005/WJ001 IS CALLED FOR.

PARTS	OPTION	
	RL012	RJ012
SHUTTLE	3K	3K
JOG/SHUTT	0R	-
SWITCH ONLY	-	3K

PARTS	OPTION	
	CAMERA PAUSE	NO CAM PAUSE
PK404	*	–
CL424	*	0R
DJ425	*	-
RL425	*	-
RK424	*	-

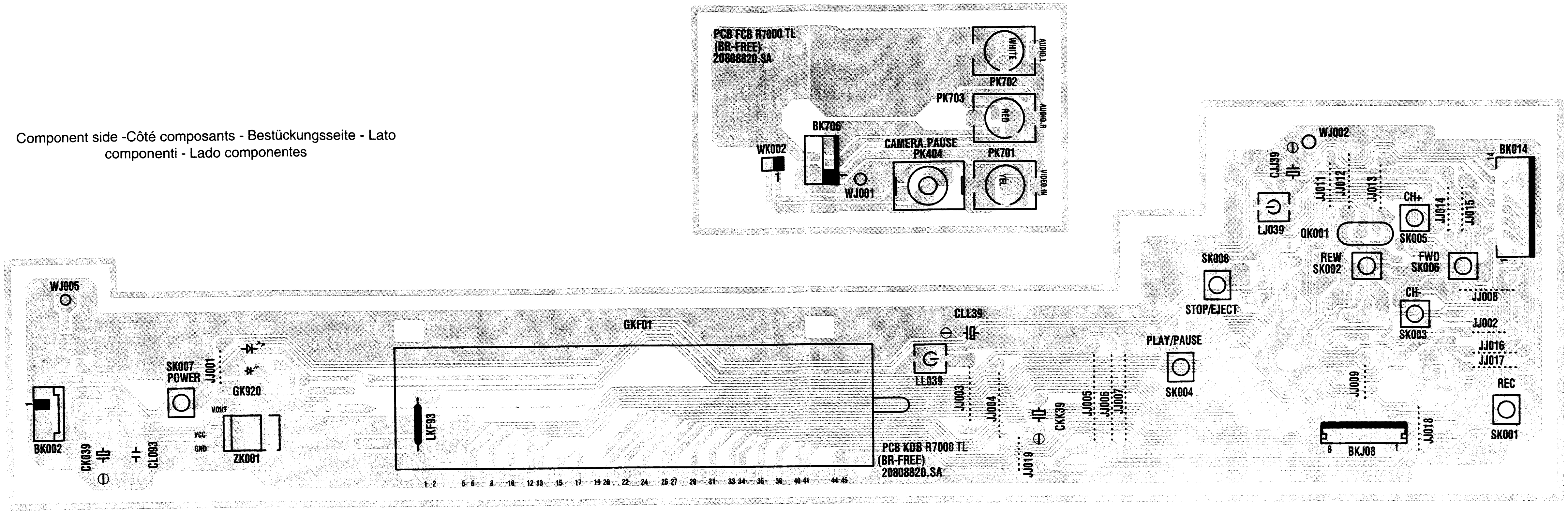
-: DELETE

*: INSERT

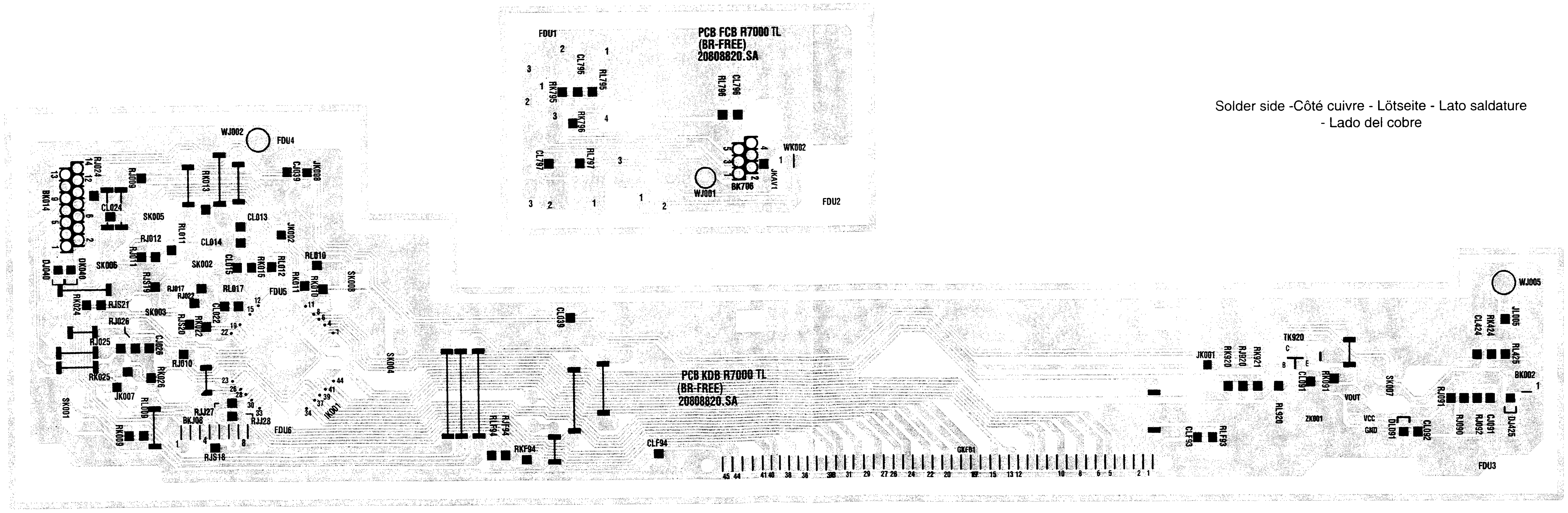
DESCRIPTION	CAM.P	ECO	FAV	JOG/SHUTT	SWITCH	S/W	FRONT PANEL
ASY KDB/FCB/JSB R7 TL22/TL3/IL2	YES	YES	3	YES	SK002,SK003 SK005,SK006	S1T	97/0B
EQU KDB R7 TL1	NO	YES	-	NO	ALL	S1T	97/0A

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

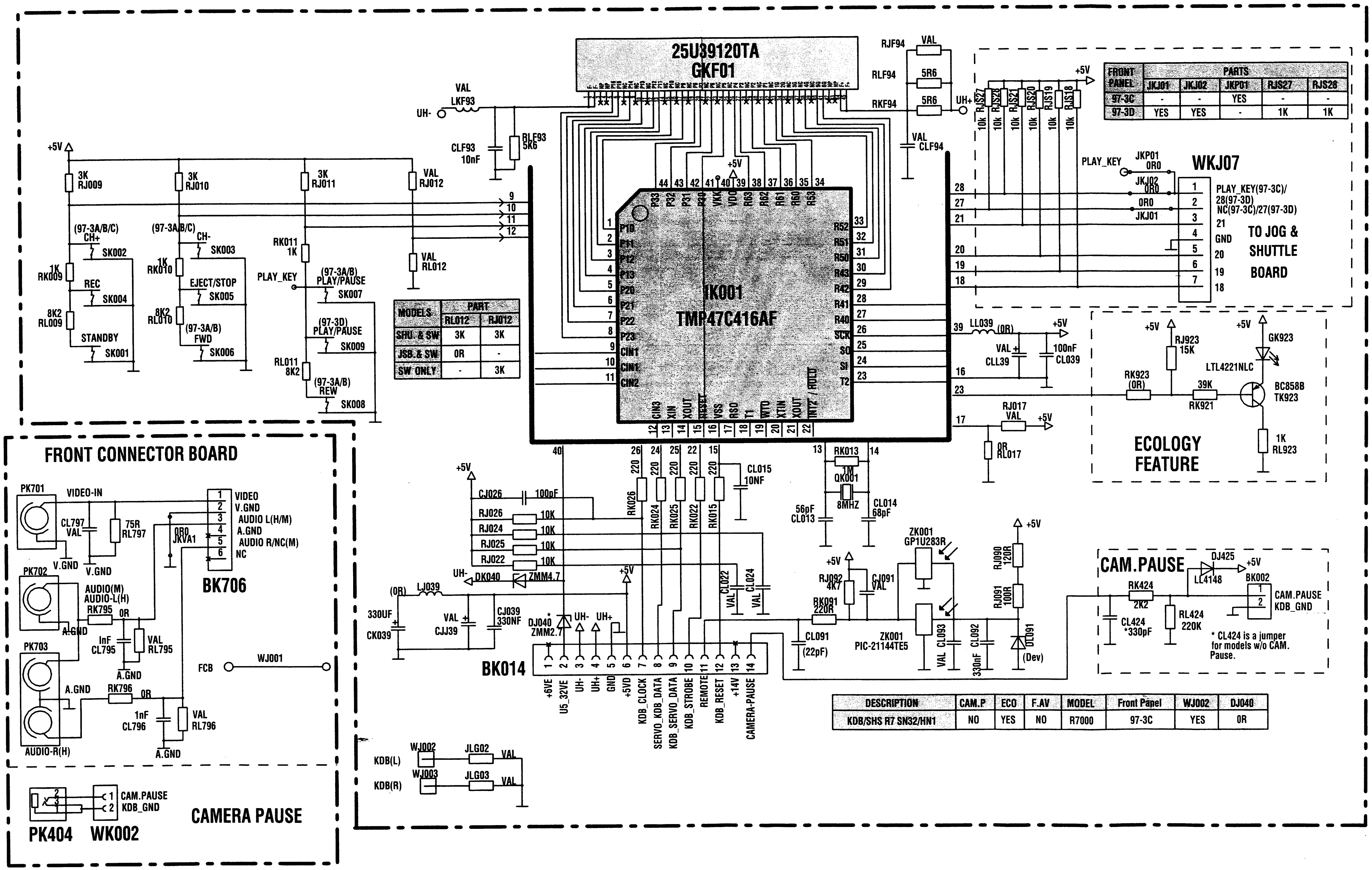

PCB FCB R7000 TL
(BR-FREE)
20808820.SA
WHITE
AUDIO L
PK702
PK703
RED
AUDIO R
BK706
CAMERA PAUSE
PK404
PK701
YEL
VIDEO IN
WK002
WJ001
WJ002
CJ039
BK014
JJ011
JJ012
JJ013
CH+
JJ014
JJ015
LJ039
QK001
SK005
REW
SK002
FWD
SK006
SK008
STOP/EJECT
CH-
JJ008
SK003
JJ002
JJ016
JJ017
WJ005
GKF01
CLL39
PLAY/PAUSE
SK004
SK007
POWER
JJ001
GK920
VOUT
VCC
GND
ZK001
LKF93
LL039
JJ003
JJ004
CKK39
JJ005
JJ006
JJ007
JJ009
REC
BKJ08
JJ018
SK001
BK002
CK039
CL093
PCB KDB R7000 TL
(BR-FREE)
20808820.SA
JJ019

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU1
CL795
RL795
RK795
RK796
RL797
CL797
PCB FCB R7000 TL
(BR-FREE)
20808820.SA
CL796
RL796
WK002
JKAV1
BK706
WJ001
FDU2
WJ002
FDU4
BK014
SK005
SK006
SK002
SK003
SK004
SK008
SK001
JK007
BKJ08
RJS18
FDU5
FDU6
CL039
RLF94
RKF94
CLF94
GKF01
PCB KDB R7000 TL
(BR-FREE)
20808820.SA
JK001
TK920
ZK001
VOUT
VCC
GND
SK007
RLF93
CLF93
WJ005
BK002
FDU3

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(EV600F)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


25U39120TA
GKF01
1K001
TMP47C416AF
+5V
UH-
UH+
VAL
LKF93
CLF93
10nF
RLF93
5K6
RJF94
RLF94
RKF94
5R6
CLF94
3K
RJ009
RJ010
RJ011
RJ012
RL012
RK009
RK010
RK011
RL009
RL010
RL011
8K2
1K
(97-3A/B/C)
CH+
CH-
SK001
SK002
SK003
SK004
SK005
SK006
SK007
SK008
SK009
REC
STANDBY
EJECT/STOP
FWD
(97-3A/B)
PLAY_KEY
PLAY/PAUSE
(97-3D)
REW
RJS27
RJS28
RJS21
RJS20
RJS19
RJS18
10k
JKP01
JKJ02
JKJ01
0R0
WKJ07
PLAY_KEY(97-3C)/
28(97-3D)
NC(97-3C)/27(97-3D)
GND
TO JOG &
SHUTTLE
BOARD
LL039
(0R)
CLL39
100nF
CL039
RJ017
RL017
0R
RJ923
15K
RK923
39K
RK921
GK923
LTL4221NLC
BC858B
TK923
RL923
ECOLOGY
FEATURE
CJ026
100pF
RJ026
RJ024
RJ025
RJ022
10K
DK040
ZMM4.7
RK026
RK024
RK025
RK022
RK015
220
CL015
10NF
CL022
CL024
RK013
1M
QK001
8MHZ
56pF
CL013
CL014
68pF
ZK001
GP1U283R
RJ092
4K7
CJ091
RK091
220R
CL091
(22pF)
PIC-21144TE5
CL093
CL092
330nF
RJ090
120R
RJ091
100R
DL091
(Dev)
CAM.PAUSE
DJ425
LL4148
BK002
RK424
2K2
RL424
220K
CL424
*330pF
KDB_GND
* CL424 is a jumper for models w/o CAM. Pause.
LJ039
330UF
CK039
CJJ39
CJ039
330NF
DJ040
ZMM2.7
BK014
+6VE
U5_32VE
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
FRONT CONNECTOR BOARD
PK701
VIDEO-IN
CL797
RL797
75R
V.GND
PK702
AUDIO(M)
AUDIO-L(H)
RK795
0R
A.GND
CL795
InF
RL795
PK703
RK796
CL796
1nF
RL796
AUDIO-R(H)
JKVA1
BK706
VIDEO
AUDIO L(H/M)
AUDIO R/NC(M)
NC
FCB
WJ001
WJ002
WJ003
JLG02
JLG03
KDB(L)
KDB(R)
PK404
WK002
CAMERA PAUSE

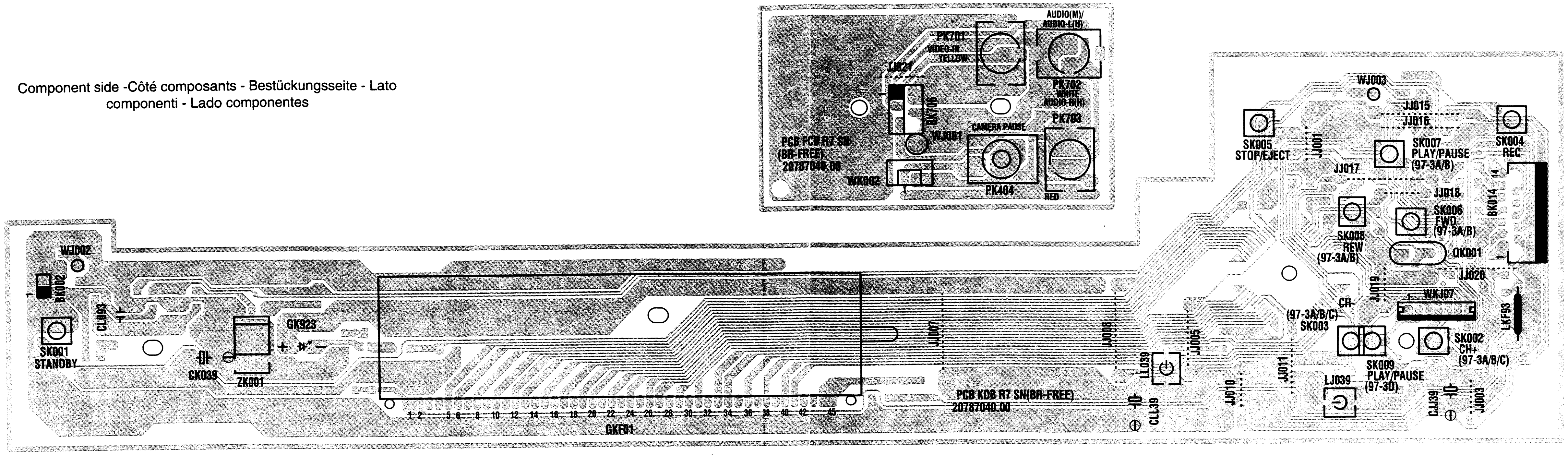
MODELS	PART	
	RL012	RJ012
SHU. & SW	3K	3K
JSB. & SW	0R	-
SW ONLY	-	3K

FRONT PANEL	PARTS				
	JKJ01	JKJ02	JKP01	RJS27	RJS28
97-3C	-	-	YES	-	-
97-3D	YES	YES	-	1K	1K

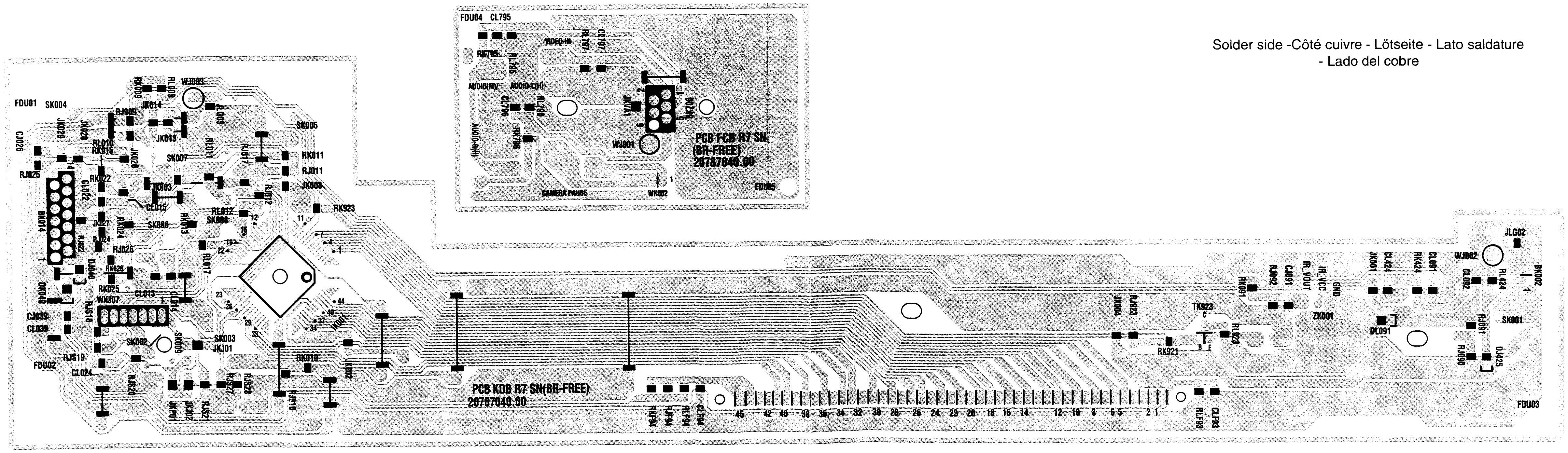
DESCRIPTION	CAM.P	ECO	F.AV	MODEL	Front Papel	WJ002	DJ040
KDB/SHS R7 SN32/HN1	NO	YES	NO	R7000	97-3C	YES	0R

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

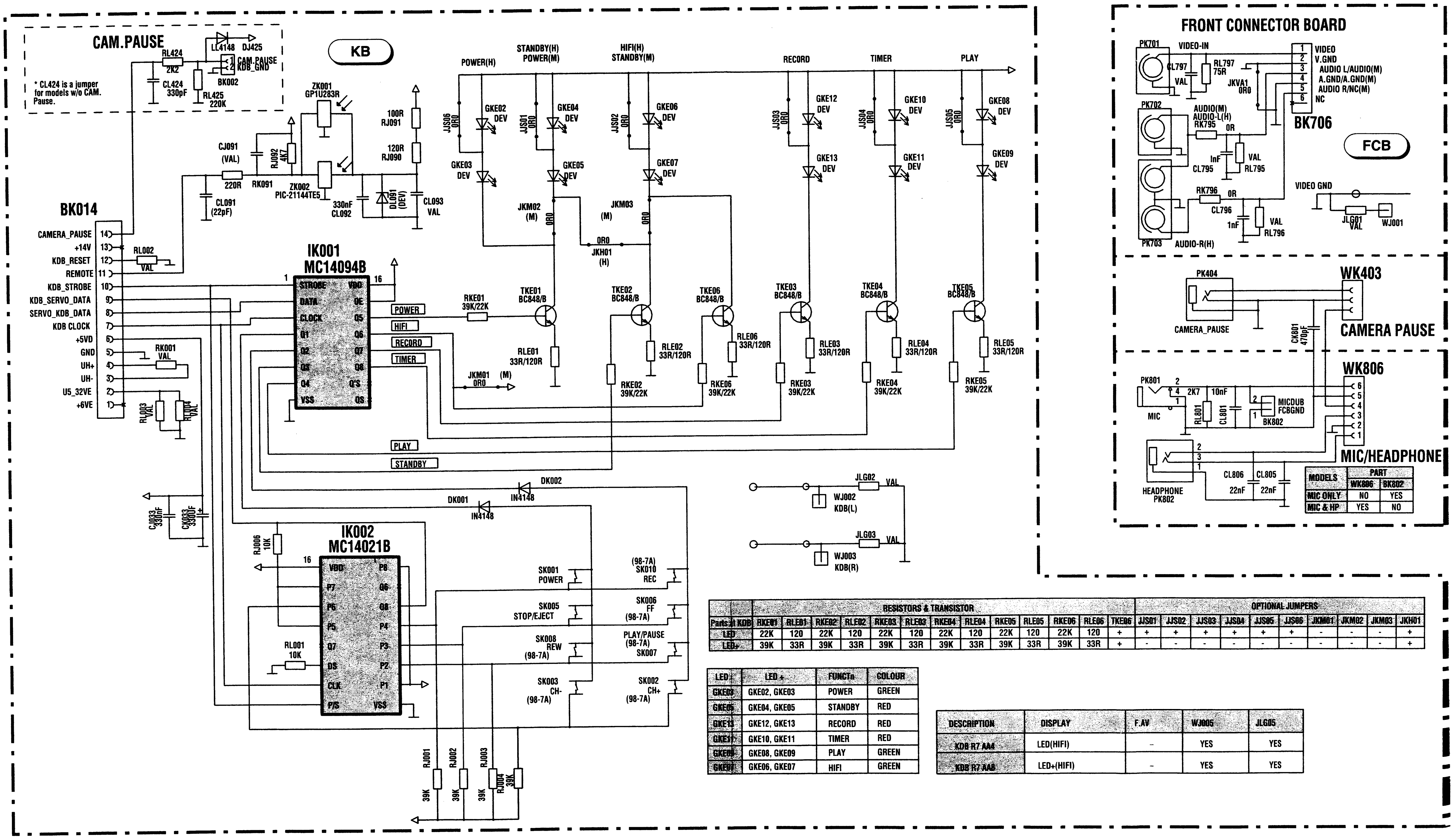

AUDIO(M)/ AUDIO-L(H)
PK701
VIDEO-IN YELLOW
PK702 WHITE AUDIO-R(H)
PK703
LJ021
BK706
WJ001
CAMERA PAUSE
PK404
RED
WK002
PCB FCB R7 SN (BR-FREE) 20787040.00
WJ003
JJ015
JJ016
SK005 STOP/EJECT
JJ017
SK007 PLAY/PAUSE (97-3A/B)
SK004 REC
BK014
JJ018
SK006 FWD (97-3A/B)
SK008 REW (97-3A/B)
QK001
JJ020
WK107
CH- (97-3A/B/C) SK003
SK002 CH+ (97-3A/B/C)
LKF93
SK009 PLAY/PAUSE (97-3D)
LJ039
CJ139
JJ003
JJ010
JJ011
JJ005
JJ008
JJ007
LL039
CL139
PCB KDB R7 SN(BR-FREE) 20787040.00
GKF01
WJ002
BK002
SK001 STANDBY
CL003
CK039
ZK001
GK923

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU04 CL795
VIDEO-IN
AUDIO(M)/ AUDIO-L(H)
AUDIO-R(H)
BK706
WJ001
PCB FCB R7 SN (BR-FREE) 20787040.00
CAMERA PAUSE
WK002
FDU05
FDU01 SK004
WJ003
SK005
SK007
SK006
RJ011
RK011
RK923
BK014
WK107
SK002
SK003
JK101
SK009
FDU02
CL024
RJS19
CJ039
CL039
PCB KDB R7 SN(BR-FREE) 20787040.00
JK004
RJ923
TK923
RK921
RK001
IR_VOUT
IR_VCC
GND
ZK001
JK001
DL091
WJ002
JLG02
BK002
SK001
FDU03
CLF93

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR *(FV305HV - VK 841PS)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


CAM.PAUSE
RL424 2K2
LL4148 DJ425
CAM.PAUSE
KDB_GND
BK002
CL424 330pF
RL425 220K
* CL424 is a jumper for models w/o CAM. Pause.
KB
ZK001 GP1U283R
100R RJ091
120R RJ090
CJ091 (VAL)
RJ092 4K7
220R RK091
ZK002 PIC-21144TE5
CL091 (22pF)
330nF CL092
DL091 (DEV)
CL093 VAL
BK014
CAMERA_PAUSE
+14V
KDB_RESET
REMOTE
KDB_STROBE
KDB_SERVO_DATA
SERVO_KDB_DATA
KDB CLOCK
+5VD
GND
UH+
UH-
U5_32VE
+6VE
RL002 VAL
RK001 VAL
RL003 VAL
RL004 VAL
IK001
MC14094B
STROBE
DATA
CLOCK
VDD
OE
VSS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06 ORO
JJS01 ORO
JJS02 ORO
JJS03 ORO
JJS04 ORO
JJS05 ORO
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE08 DEV
GKE09 DEV
GKE10 DEV
GKE11 DEV
GKE12 DEV
GKE13 DEV
JKM02 (M) ORO
JKM03 (M) ORO
JKH01 (H) ORO
JKM01 (M) ORO
RKE01 39K/22K
TKE01 BC848/B
TKE02 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
TKE06 BC848/B
RLE01 33R/120R
RLE02 33R/120R
RLE03 33R/120R
RLE04 33R/120R
RLE05 33R/120R
RLE06 33R/120R
RKE02 39K/22K
RKE03 39K/22K
RKE04 39K/22K
RKE05 39K/22K
RKE06 39K/22K
DK001 IN4148
DK002 IN4148
CJ033 330nF
CK003 330nF
RJ006 10K
IK002
MC14021B
VDD
DS
CLK
P/S
VSS
RL001 10K
SK001 POWER
SK005 STOP/EJECT
SK008 REW (98-7A)
SK003 CH- (98-7A)
(98-7A) SK010 REC
SK006 FF (98-7A)
PLAY/PAUSE (98-7A) SK007
SK002 CH+ (98-7A)
RJ001 39K
RJ002 39K
RJ003 39K
RJ004 39K
JLG02 VAL
WJ002 KDB(L)
JLG03 VAL
WJ003 KDB(R)
FRONT CONNECTOR BOARD
PK701 VIDEO-IN
CL797 VAL
RL797 75R
JKVA1 ORO
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
BK706
PK702
AUDIO(M) AUDIO-L(H)
RK795 0R
CL795 1nF
RL795 VAL
FCB
RK796 0R
CL796 1nF
RL796 VAL
PK703 AUDIO-R(H)
VIDEO GND
JLG01 VAL
WJ001
PK404
CAMERA_PAUSE
CK801 470pF
WK403
CAMERA PAUSE
WK806
PK801
MIC
2K7
10nF
RL801
CL801
MICDUB
FCBGND
BK802
MIC/HEADPHONE
HEADPHONE PK802
CL806 22nF
CL805 22nF

MODELS	PART	
	WK806	BK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

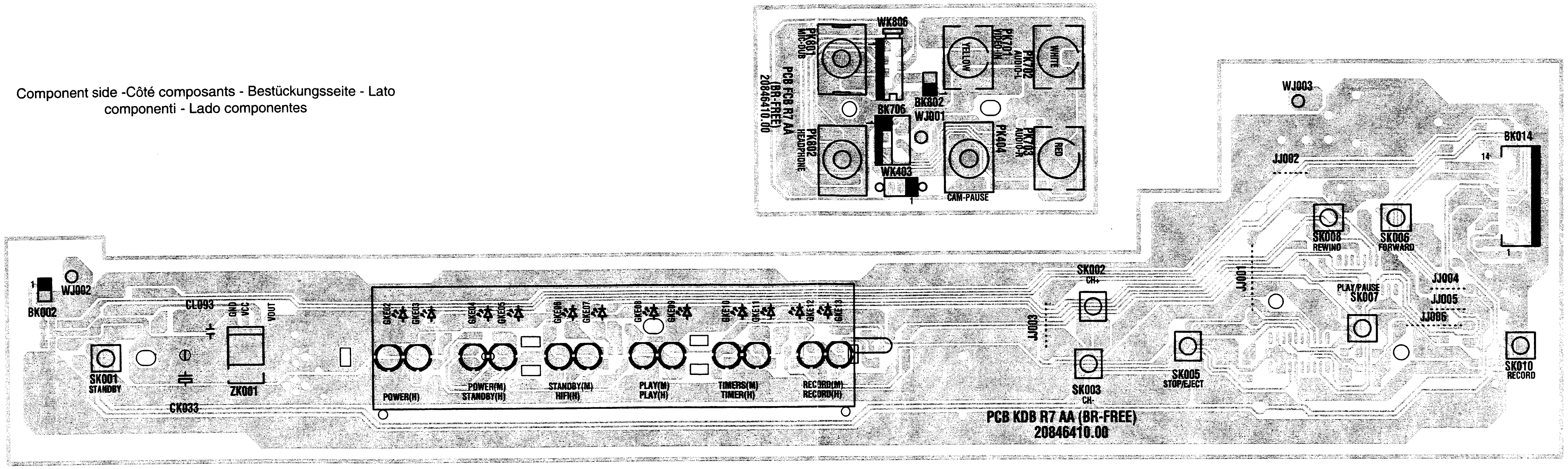
	RESISTORS & TRANSISTOR													OPTIONAL JUMPERS									
Parts at KDB	RKE01	RLE01	RKE02	RLE02	RKE03	RLE03	RKE04	RLE04	RKE05	RLE05	RKE06	RLE06	TKE06	JJS01	JJS02	JJS03	JJS04	JJS05	JJS06	JKM01	JKM02	JKM03	JKH01
LED	22K	120	22K	120	22K	120	22K	120	22K	120	22K	120	+	+	+	+	+	+	+	-	-	-	+
LED+	39K	33R	39K	33R	39K	33R	39K	33R	39K	33R	39K	33R	+	-	-	-	-	-	-	-	-	-	+

LED	LED +	FUNCTn	COLOUR
GKE03	GKE02, GKE03	POWER	GREEN
GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	PLAY	GREEN
GKE07	GKE06, GKE07	HIFI	GREEN

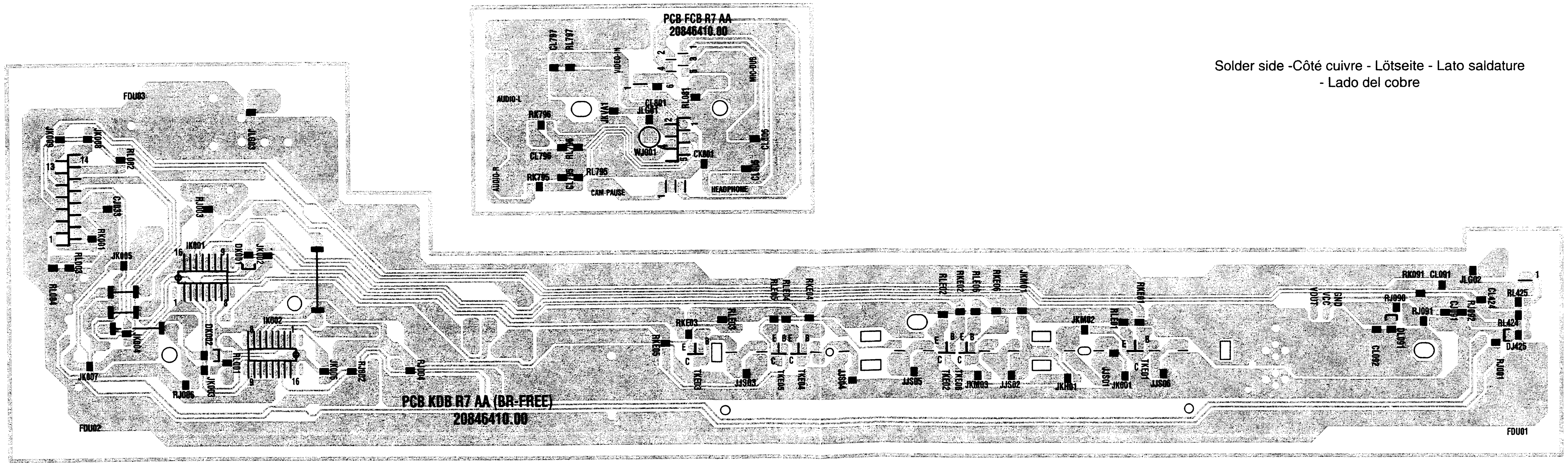
DESCRIPTION	DISPLAY	F.AV	WJ005	JLG05
KDB R7 AA4	LED(HIFI)	–	YES	YES
KDB R7 AA8	LED+(HIFI)	–	YES	YES

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

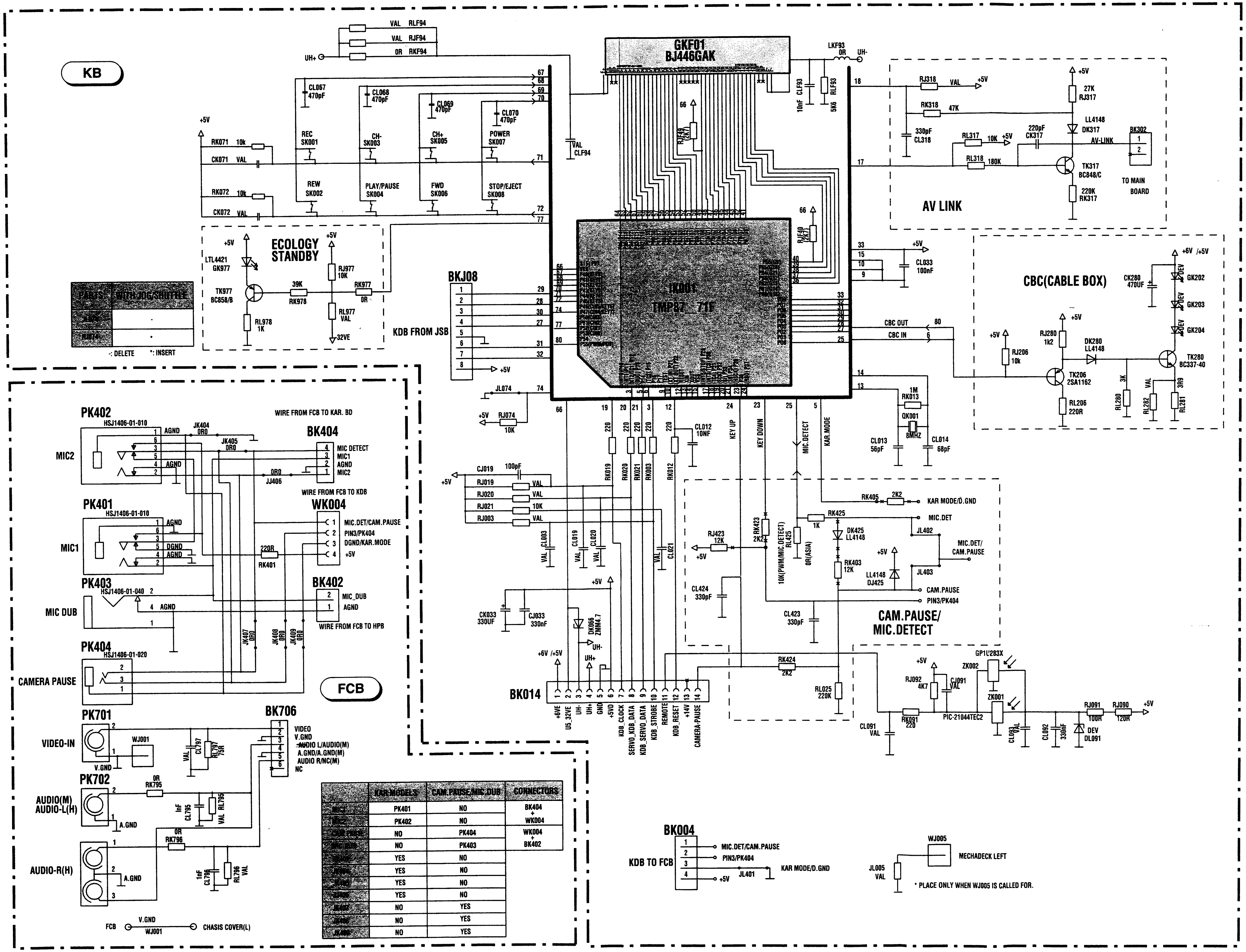

PK801
MIC-DUB
PCB FCB R7 AA
(BR-FREE)
20846410.00
PK802
HEADPHONE
WK806
BK706
BK802
WJ001
WK403
1
PK701
VIDEO-IN
YELLOW
PK702
AUDIO-L
WHITE
PK404
CAM-PAUSE
PK703
AUDIO-R
RED
1
BK002
WJ002
CL093
GND
VCC
VOUT
SK001
STANDBY
CK033
ZK001
GKE02
GKE03
GKE04
GKE05
GKE06
GKE07
GKE08
GKE09
GKE10
GKE11
GKE12
GKE13
POWER(H)
POWER(M)
STANDBY(H)
STANDBY(M)
HIFI(H)
PLAY(M)
PLAY(H)
TIMERS(M)
TIMER(H)
RECORD(M)
RECORD(H)
SK002
CH+
JJ003
SK003
CH-
SK005
STOP/EJECT
JJ001
WJ003
JJ002
BK014
14
1
SK008
REWIND
SK006
FORWARD
PLAY/PAUSE
SK007
JJ004
JJ005
JJ006
SK010
RECORD
PCB KDB R7 AA (BR-FREE)
20846410.00

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB FCB R7 AA
20846410.00
AUDIO-L
AUDIO-R
VIDEO-IN
RK796
CL796
RK795
RL795
JL801
CL801
WJ001
CK801
CAM-PAUSE
HEADPHONE
FDU03
FDU02
FDU01
13
14
1
JK001
JK002
16
1
GND
VCC
VOUT
RK091
CL091
JLG02
RJ090
RJ091
BL425
BL424
DJ425
CL092
PCB KDB R7 AA (BR-FREE)
20846410.00

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6850G)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
FCB
GKF01
BJ446GAK
IK001
TMP87 71F
AV LINK
CBC(CABLE BOX)
ECOLOGY STANDBY
BKJ08
KDB FROM JSB
BK014
BK004
KDB TO FCB
CAM.PAUSE/ MIC.DETECT
PK402
MIC2
PK401
MIC1
PK403
MIC DUB
PK404
CAMERA PAUSE
PK701
VIDEO-IN
PK702
AUDIO(M) AUDIO-L(H)
AUDIO-R(H)
BK404
WK004
BK402
BK706
WIRE FROM FCB TO KAR. BD
WIRE FROM FCB TO KDB
WIRE FROM FCB TO HPB
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
REC SK001
CH- SK003
CH+ SK005
POWER SK007
REW SK002
PLAY/PAUSE SK004
FWD SK006
STOP/EJECT SK008
TO MAIN BOARD
AV-LINK
CBC OUT
CBC IN
KEY UP
KEY DOWN
MIC.DETECT
KAR.MODE
KAR MODE/D.GND
MIC.DET
MIC.DET/ CAM.PAUSE
CAM.PAUSE
PIN3/PK404
MIC.DET/CAM.PAUSE
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
GP1U283X
PIC-21044TEC2
WJ005
MECHADECK LEFT
* PLACE ONLY WHEN WJ005 IS CALLED FOR.
FCB
V.GND
WJ001
CHASIS COVER(L)
8MHz

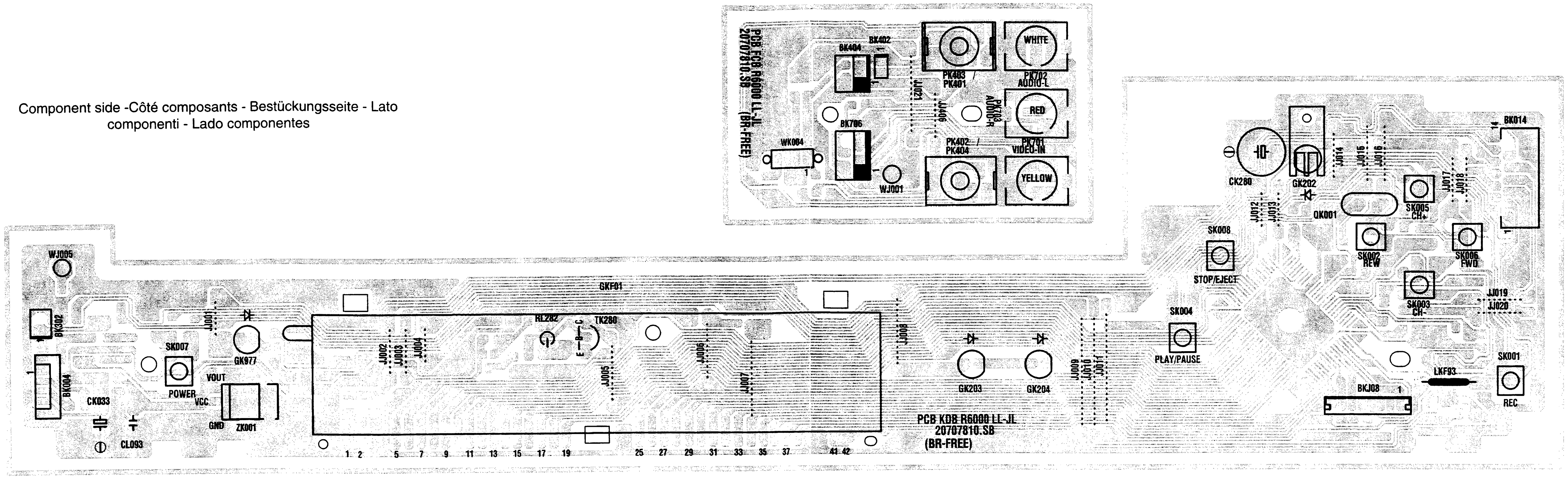
PARTS	WITH JOG/SHUTTLE
JL074	-
RJ074	*

-: DELETE *: INSERT

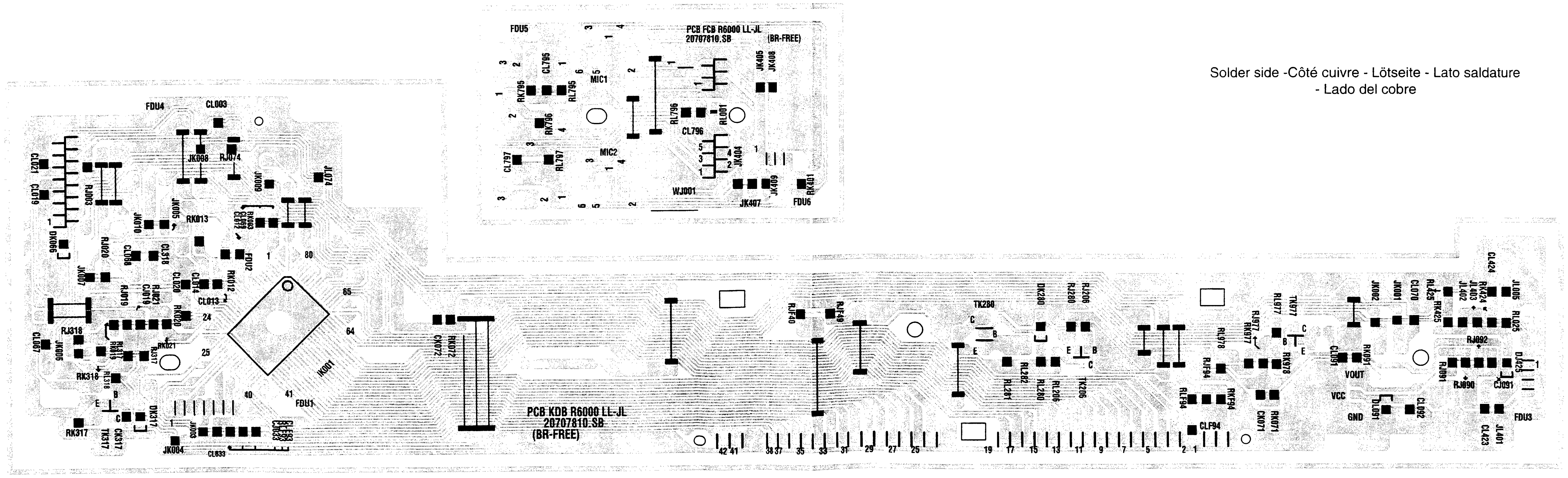
	KAR MODELS	CAM.PAUSE/MIC.DUB	CONNECTORS
MIC1	PK401	NO	BK404 + WK004
MIC2	PK402	NO	
CAM.PAUSE	NO	PK404	WK004 + BK402
MIC.DUB	NO	PK403	
RK401	YES	NO	
JK404	YES	NO	
JK405	YES	NO	
JJ406	YES	NO	
JK407	NO	YES	
JK408	NO	YES	
JK409	NO	YES	

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

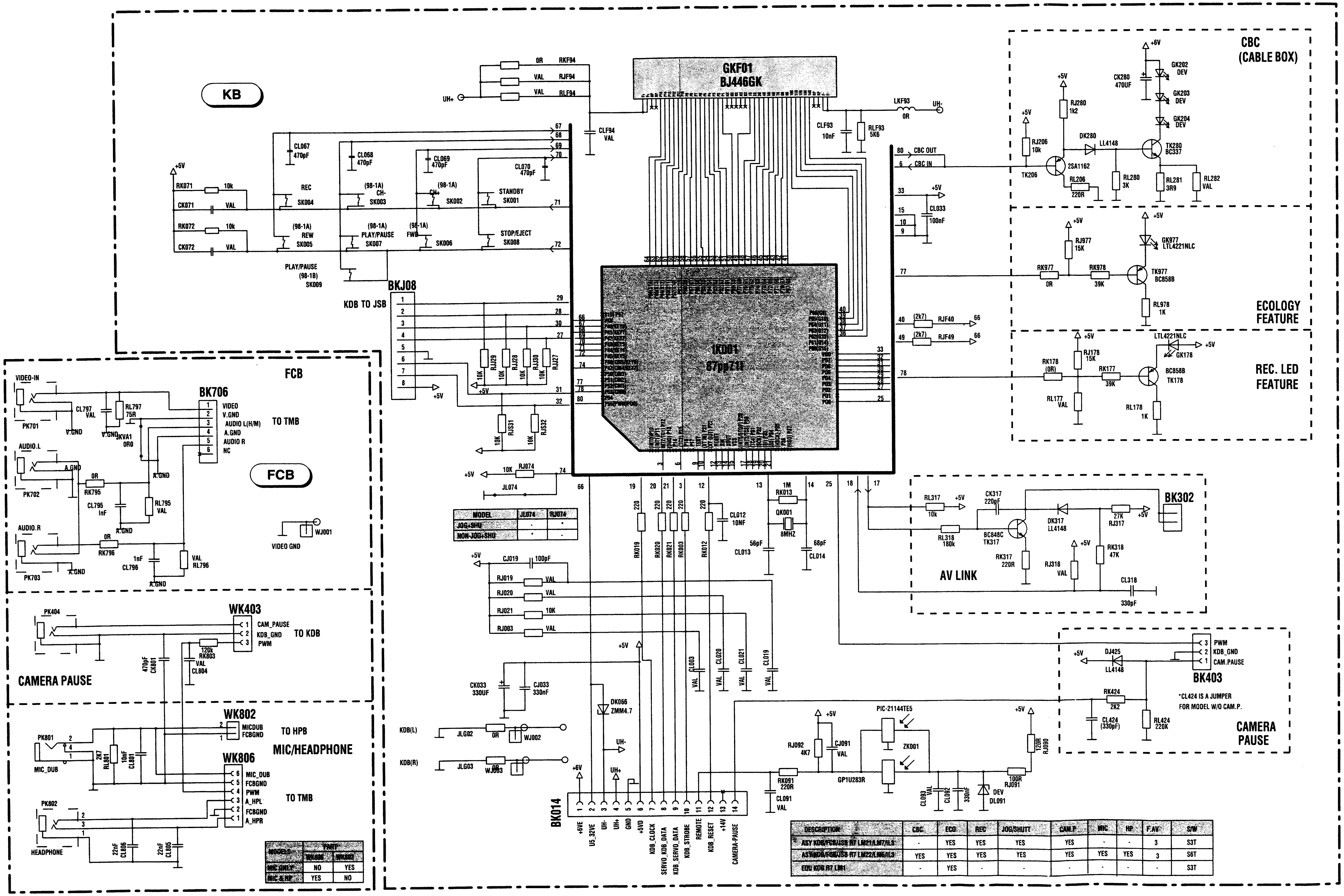

PCB FCB R6000 LL-JL
20707810.SB
(BR-FREE)
BK404
BK402
BK706
WK064
WJ001
PK403
PK401
PK402
PK404
WHITE
PK702
AUDIO-L
RED
PK701
VIDEO-IN
YELLOW
BK014
CK280
GK202
QK001
SK005
CH+
SK008
STOP/EJECT
SK002
REW
SK006
FWD
SK003
CH-
JJ019
JJ020
SK004
PLAY/PAUSE
SK001
REC
LXF93
BKJ08
WJ005
BK002
BK004
SK007
POWER
GK977
VOUT
VCC
GND
ZK001
CK033
CL093
GKF01
RL282
TK280
GK203
GK204
PCB KDB R6000 LL-JL
20707810.SB
(BR-FREE)
1 2 5 7 9 11 13 15 17 19 25 27 29 31 33 35 37 41 42

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU5
PCB FCB R6000 LL-JL
20707810.SB
(BR-FREE)
MIC1
MIC2
CL796
WJ001
JK407
FDU6
FDU4
CL003
IK001
FDU1
FDU2
TK288
VOUT
VCC
GND
FDU3
PCB KDB R6000 LL-JL
20707810.SB
(BR-FREE)
42 41 38 37 35 33 31 29 27 25 19 17 15 13 11 9 7 5 2 1

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(M9860G)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
GKF01
BJ446GK
IK001
87pp711
FCB
BK706
TO TMB
VIDEO-IN
AUDIO.L
AUDIO.R
PK701
PK702
PK703
WK403
TO KDB
CAM_PAUSE
KDB_GND
PWM
CAMERA PAUSE
PK404
WK802
TO HPB
MICDUB
FCBGND
MIC/HEADPHONE
WK806
MIC_DUB
A_HPL
A_HPR
PK801
PK802
HEADPHONE
BKJ08
KDB TO JSB
REC
SK004
CH-
SK003
CH+
SK002
STANDBY
SK001
REW
SK005
PLAY/PAUSE
SK007
FWD
SK006
STOP/EJECT
SK008
SK009
UH+
UH-
LKF93
CBC OUT
CBC IN
CBC
(CABLE BOX)
GK202
GK203
GK204
TK280
BC337
TK206
2SA1162
DK280
LL4148
GK977
LTL4221NLC
TK977
BC858B
ECOLOGY FEATURE
GK178
TK178
REC. LED FEATURE
BK302
TK317
BC848C
DK317
AV LINK
BK403
CAM.PAUSE
DJ425
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.
CAMERA PAUSE
QK001
8MHZ
PIC-21144TE5
ZK001
GP1U283R
DK066
ZMM4.7
KDB(L)
KDB(R)
WJ001
VIDEO GND
WJ002
WJ003
BK014
+6VE
U5_32VE
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE

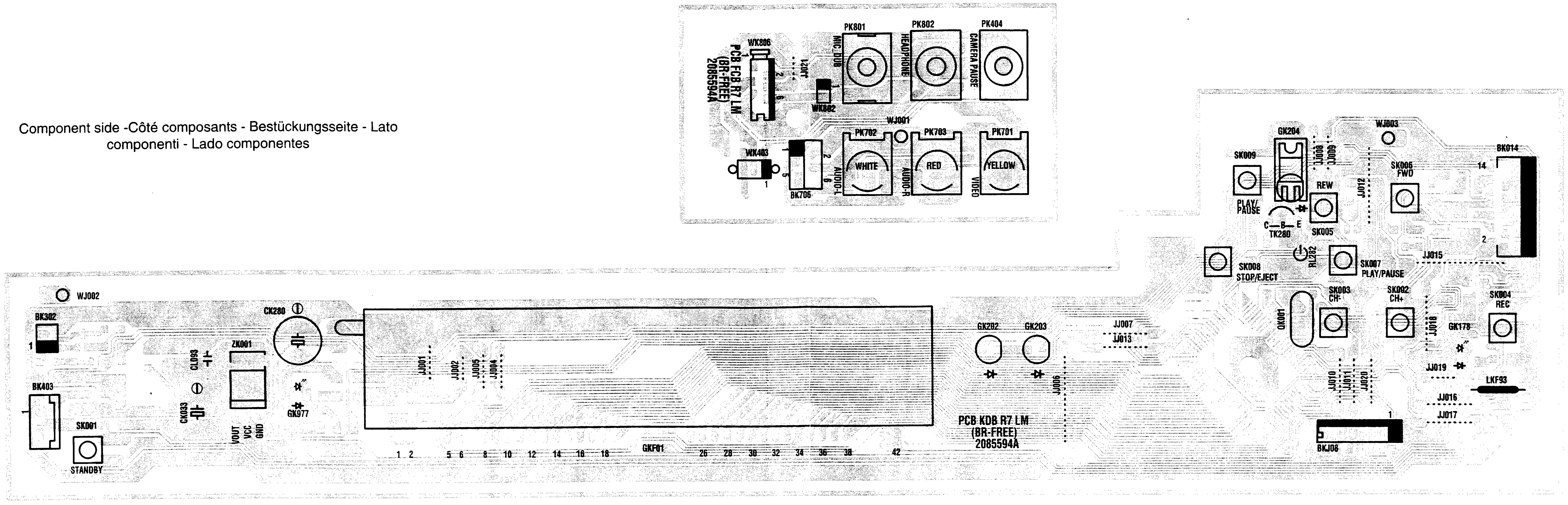
MODEL	JL074	RJ074
JOG+SHU	-	*
NON-JOG+SHU	*	-

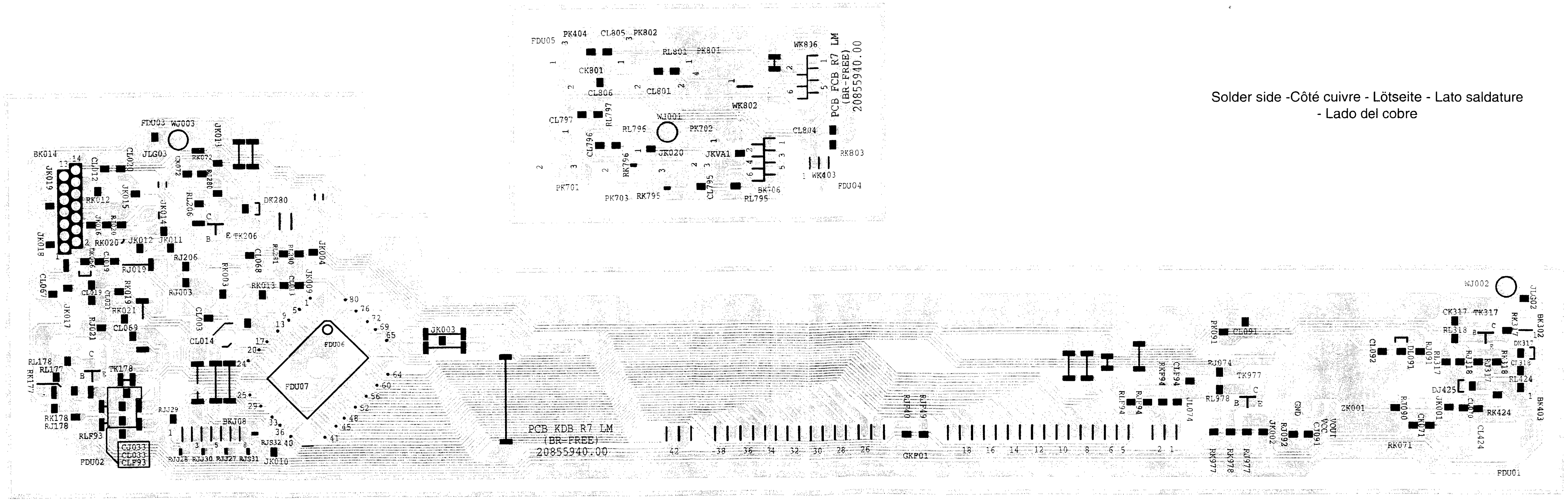
MODELS	PART	
	WK806	WK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

DESCRIPTION	CBC	ECO	REC	JOG/SHUTT	CAM.P	MIC	HP	F.AV	S/W
ASY KDB/FCB/JSB R7 LM21/LM7/IL3	-	YES	YES	YES	YES	-	-	3	S3T
ASY KDB/FCB/JSB R7 LM22/LM6/IL3	YES	YES	YES	YES	YES	YES	YES	3	S6T
EQU KDB R7 LM1	-	YES	-	-	-	-	-	-	S3T

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

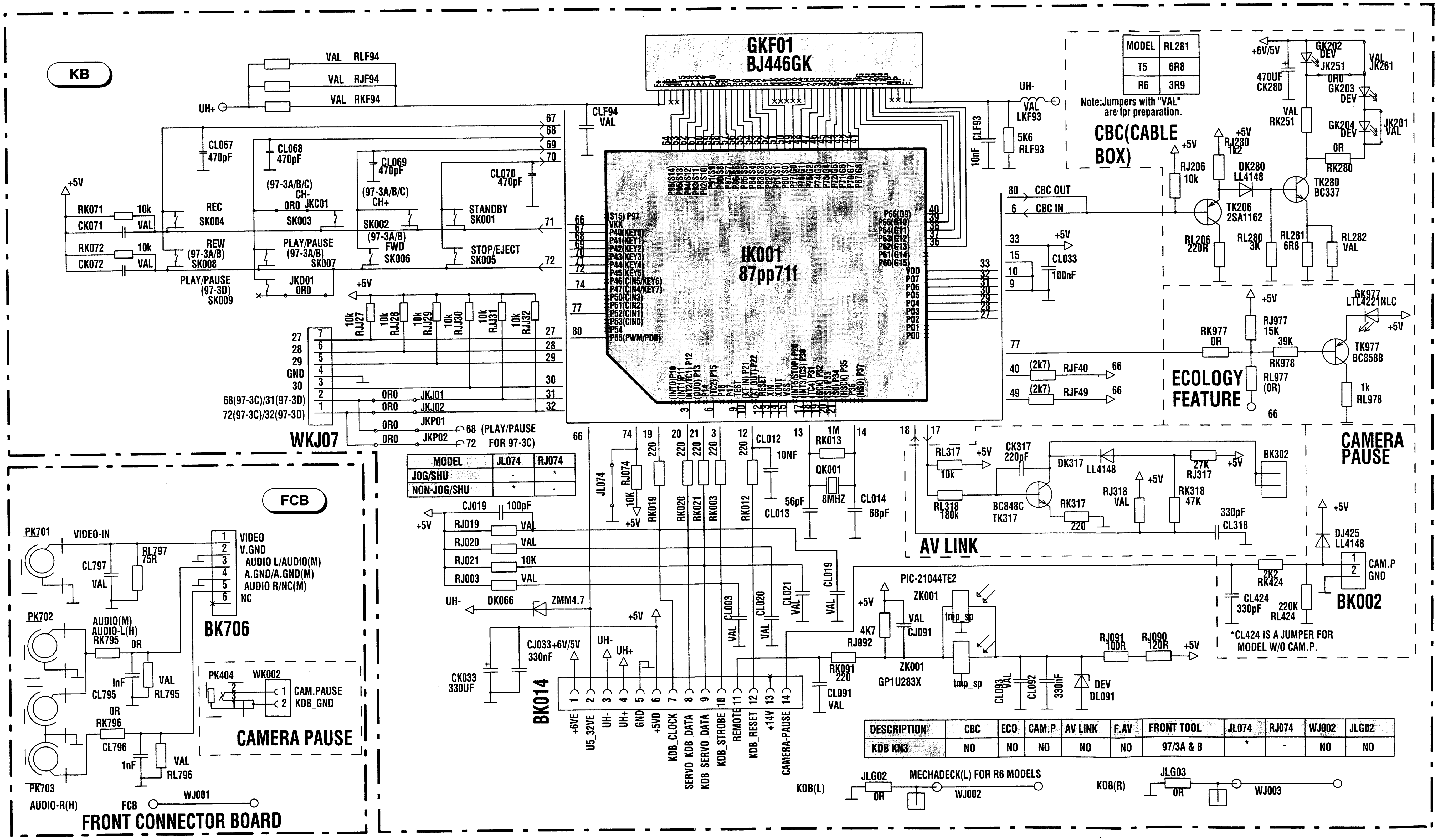

PK801
PK802
PK404
MIC DUB
HEADPHONE
CAMERA PAUSE
PCB FCB R7 LM
(BR-FREE)
20855940A
WK806
WK802
WJ001
WK403
BK706
PK702
PK703
PK701
WHITE
RED
YELLOW
AUDIO-L
AUDIO-R
VIDEO
WJ002
BK302
BK403
SK001
STANDBY
CK280
ZK001
CL033
CK033
GK977
VOUT
VCC
GND
JJ001
JJ002
JJ005
JJ004
GKF01
1 2 5 6 8 10 12 14 16 18 26 28 30 32 34 36 38 42
GK202
GK203
JJ007
JJ013
JJ009
PCB KDB R7 LM
(BR-FREE)
2085594A
WJ003
GK204
BK014
SK009
PLAY/PAUSE
REW
SK006
FWD
TK280
SK005
RL282
SK008
STOP/EJECT
SK007
PLAY/PAUSE
JJ015
SK003
CH-
SK002
CH+
SK004
REC
GK178
JJ019
LKF93
JJ016
JJ017
JJ010
JJ011
JJ020
BKJ08
14
2
1


FDU05
PK404
CL805
PK802
RL801
PK801
CK801
CL806
CL801
WK836
WK802
PCB FCB R7 LM
(BR-FREE)
20855940.00
CL797
RJ001
RL796
PK702
CL804
RK803
JK020
JKVA1
WK403
PK701
PK703
RK795
CL795
BK706
RL795
FDU04
FDU03
WJ003
JK013
BK014
JK019
JK018
CL067
JK017
DK280
TK206
RK020
JK012
JK011
RJ206
RJ003
CL069
CL014
FDU06
FDU07
JK003
RL178
RK178
RJ178
TK178
RLF93
FDU02
CJ033
CL033
CLF93
BKJ08
RJ029
RJ028
RJ030
RJ027
RJ031
RJ032
JK010
PCB KDB R7 LM
(BR-FREE)
20855940.00
42 38 36 34 32 30 28 26
GKP01
18 16 14 12 10 8 6 5 2 1
CL091
RK091
RJ074
TK977
RLF94
CLF94
RKF94
JL074
RL978
RK977
RK978
RJ977
JK002
RJ092
GND
VCC
VOUT
CJ091
CL092
DL091
ZK001
RJ090
CK071
RK071
JK001
CL424
RK424
BK403
WJ002
CK317
TK317
RL318
DK317
BK302
RJ317
RK317
CL318
DJ425
RL424
FDU01

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(EV600G)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

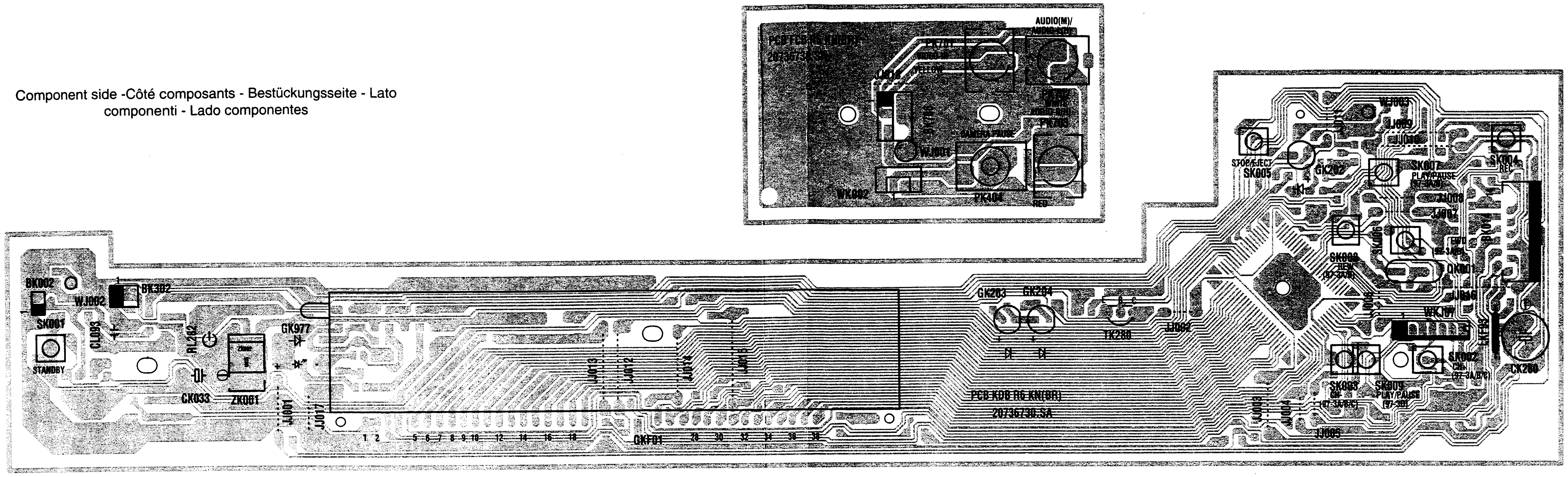

KB
GKF01
BJ446GK
IK001
87pp71f
UH+
UH-
VAL RLF94
VAL RJF94
VAL RKF94
CLF94 VAL
CL067 470pF
CL068 470pF
CL069 470pF
CL070 470pF
+5V
RK071 10k
CK071 VAL
RK072 10k
CK072 VAL
REC SK004
REW (97-3A/B) SK008
PLAY/PAUSE (97-3D) SK009
(97-3A/B/C) CH- ORO JKC01 SK003
PLAY/PAUSE (97-3A/B) SK007
JKD01 ORO
(97-3A/B/C) CH+ SK002
(97-3A/B) FWD SK006
STANDBY SK001
STOP/EJECT SK005
RJJ27 RJJ28 RJJ29 RJJ30 RJJ31 RJJ32 10k
GND
68(97-3C)/31(97-3D)
72(97-3C)/32(97-3D)
ORO JKJ01
ORO JKJ02
ORO JKP01
ORO JKP02
68 (PLAY/PAUSE
72 FOR 97-3C)
WKJ07
P97 VKK P40(KEY0) P41(KEY1) P42(KEY2) P43(KEY3) P44(KEY4) P45(KEY5) P46(CIN5/KEY6) P47(CIN4/KEY7) P50(CIN3) P51(CIN2) P52(CIN1) P53(CIN0) P54 P55(PWM/PDO)
P66(G9) P65(G10) P64(G11) P63(G12) P62(G13) P61(G14) P60(G15) VDD P07 P06 P05 P04 P03 P02 P01 P00
LKF93 VAL
CLF93 10nF
RLF93 5K6
80 CBC OUT
6 CBC IN
CL033 100nF
RJF40 (2k7)
RJF49 (2k7)
CBC(CABLE BOX)
Note:Jumpers with "VAL" are fpr preparation.
RJ206 10k
RJ280 1k2
DK280 LL4148
TK206 2SA1162
TK280 BC337
RL206 220R
RL280 3K
RL281 6R8
RL282 VAL
+6V/5V
470UF CK280
GK202 DEV
JK251
JK261 VAL
GK203 DEV
RK251 VAL
GK204 DEV
JK201 VAL
RK280 0R
ECOLOGY FEATURE
RK977 0R
RJ977 15K
RK978 39K
RL977 (0R)
GK977 LTL4221NLC
TK977 BC858B
RL978 1k
CAMERA PAUSE
AV LINK
RL317 10k
CK317 220pF
DK317 LL4148
RL318 180k
BC848C TK317
RK317 220
RJ318 VAL
RJ317 27K
RK318 47K
BK302
CL318 330pF
DJ425 LL4148
RK424 2K2
CL424 330pF
RL424 220K
CAM.P GND
BK002
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.
JL074
RJ074 10K
RK019 220
RK020 220
RK021 220
RK003 220
RK012 220
CL012 10NF
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
CJ019 100pF
RJ019 VAL
RJ020 VAL
RJ021 10K
RJ003 VAL
DK066 ZMM4.7
CL003 VAL
CL020 VAL
CL021 VAL
CL019 VAL
CJ033+6V/5V 330nF
CK033 330UF
BK014
+6VE U5_32VE UH- UH+ GND +5VD KDB_CLOCK SERVO_KDB_DATA KDB_SERVO_DATA KDB_STROBE REMOTE KDB_RESET +14V CAMERA-PAUSE
PIC-21044TE2 ZK001
RJ092 4K7
CJ091 VAL
tmp_sp
ZK001 GP1U283X
RK091 220
CL091 VAL
RJ091 100R
RJ090 120R
CL093 VAL
CL092
330nF
DEV DL091
KDB(L)
JLG02 0R
MECHADECK(L) FOR R6 MODELS
WJ002
KDB(R)
JLG03 0R
WJ003
FCB
PK701 VIDEO-IN
RL797 75R
CL797 VAL
VIDEO V.GND AUDIO L/AUDIO(M) A.GND/A.GND(M) AUDIO R/NC(M) NC
BK706
PK702 AUDIO(M) AUDIO-L(H)
RK795 0R
CL795 InF
RL795 VAL
RK796 0R
CL796 1nF
RL796 VAL
PK703 AUDIO-R(H)
PK404 WK002
CAM.PAUSE KDB_GND
CAMERA PAUSE
FCB WJ001
FRONT CONNECTOR BOARD

MODEL	RL281
T5	6R8
R6	3R9

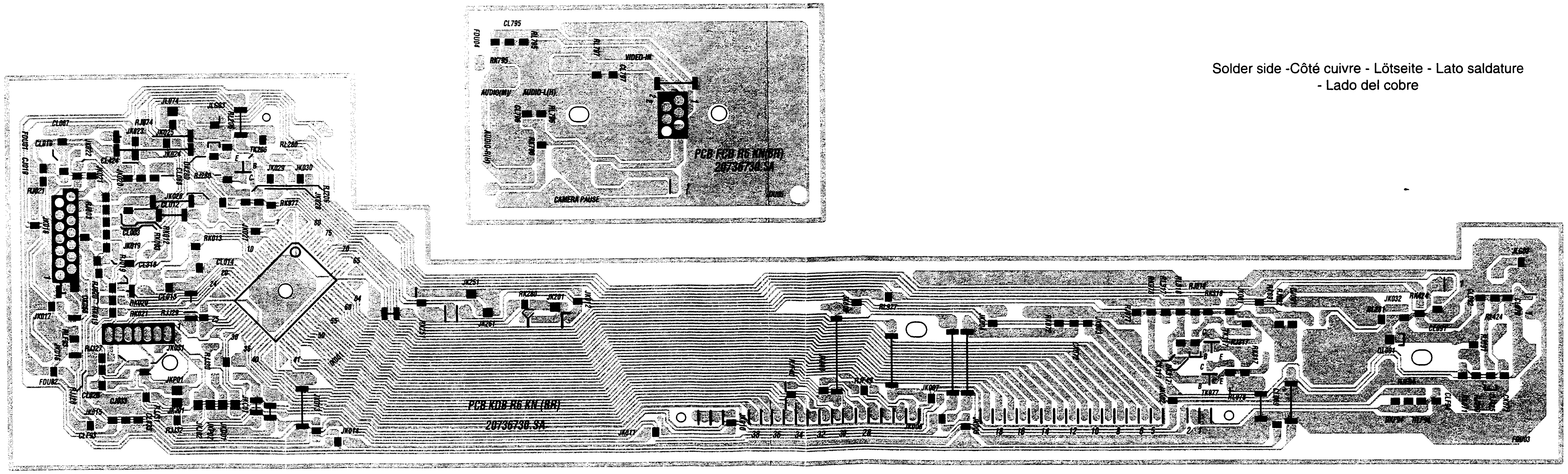
MODEL	JL074	RJ074
JOG/SHU	-	*
NON-JOG/SHU	*	-

DESCRIPTION	CBC	ECO	CAM.P	AV LINK	F.AV	FRONT TOOL	JL074	RJ074	WJ002	JLG02
KDB KN3	NO	NO	NO	NO	NO	97/3A & B	*	-	NO	NO

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


AUDIO(M)/
PK404
PK405
CAMERA PAUSE
WK002
RED
WJ003
JJ009
JJ008
STOP/EJECT
SK005
GK202
SK007
PLAY/PAUSE
SK004
REC
SK006
WK101
SK003
SK009
SK002
CK280
JJ003
JJ004
JJ005
GK203
GK204
TK280
PCB KDB R6 KN(BR)
20736730.SA
BK002
WJ002
GK302
SK001
STANDBY
CL093
RL282
CK033
ZK001
GK977
JJ001
JJ017
JJ013
JJ012
JJ014
JJ015
GKF01

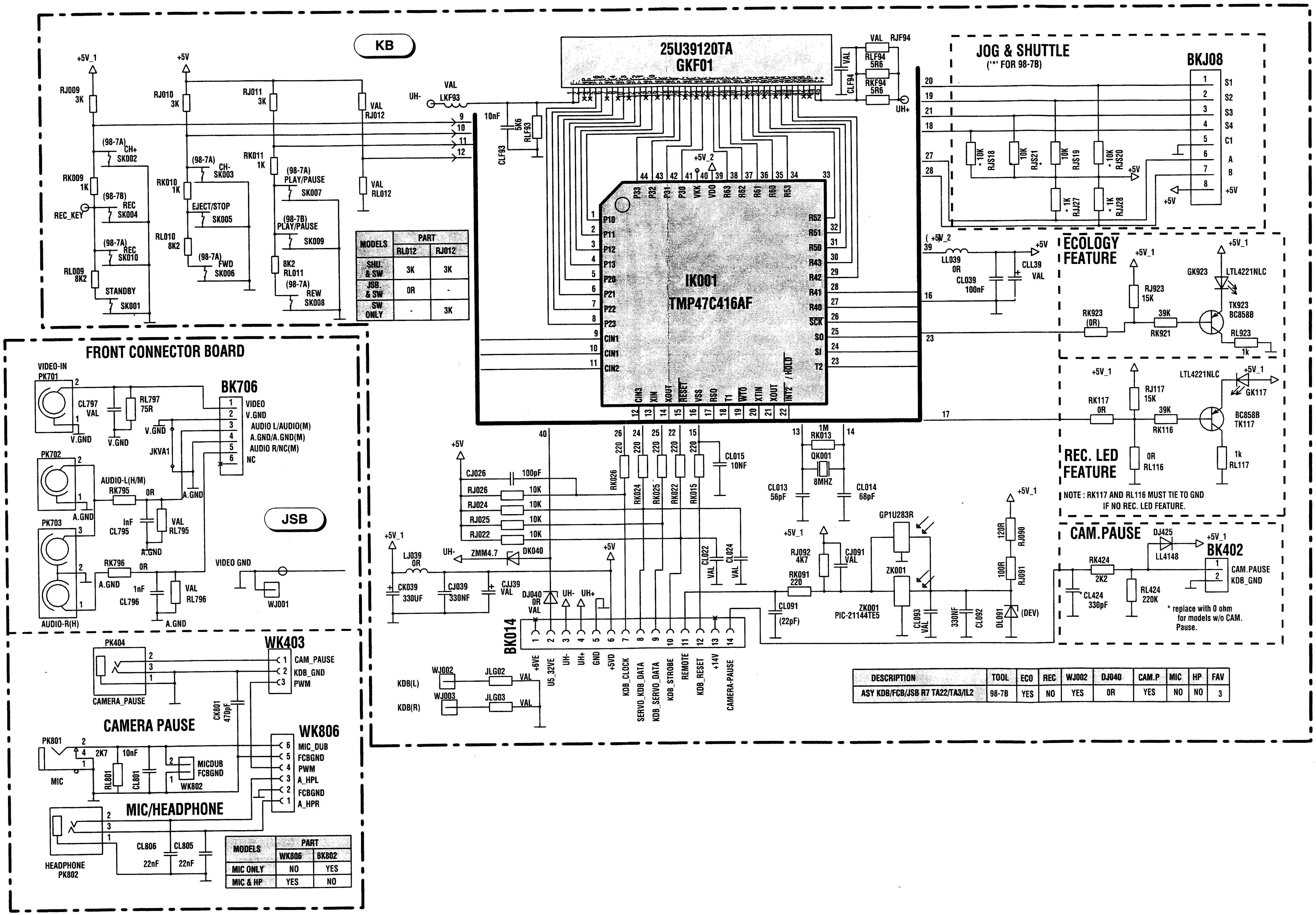
Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


CL795
RK795
VIDEO-IN
AUDIO(M)
AUDIO-L(R)
CAMERA PAUSE
PCB FCB R6 KN(BR)
20736730.SA
PCB KDB R6 KN(BR)
20736730.SA

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(FV306HV)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
25U39120TA
GKF01
IK001
TMP47C416AF
JOG & SHUTTLE
('*' FOR 98-7B)
BKJ08
ECOLOGY FEATURE
REC. LED FEATURE
NOTE : RK117 AND RL116 MUST TIE TO GND IF NO REC. LED FEATURE.
CAM.PAUSE
BK402
* replace with 0 ohm for models w/o CAM. Pause.
FRONT CONNECTOR BOARD
BK706
VIDEO-IN
PK701
PK702
PK703
AUDIO-R(H)
AUDIO-L(H/M)
VIDEO GND
JSB
BK014
WK403
CAMERA_PAUSE
CAMERA PAUSE
WK806
MIC/HEADPHONE
HEADPHONE PK802
MIC
PK801
GP1U283R
ZK001 PIC-21144TE5
QK001 8MHZ
KDB(L)
KDB(R)
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
STANDBY
REC_KEY
CH+
CH-
REC
EJECT/STOP
FWD
REW
PLAY/PAUSE
MIC_DUB
FCBGND
PWM
A_HPL
A_HPR
CAM_PAUSE
KDB_GND

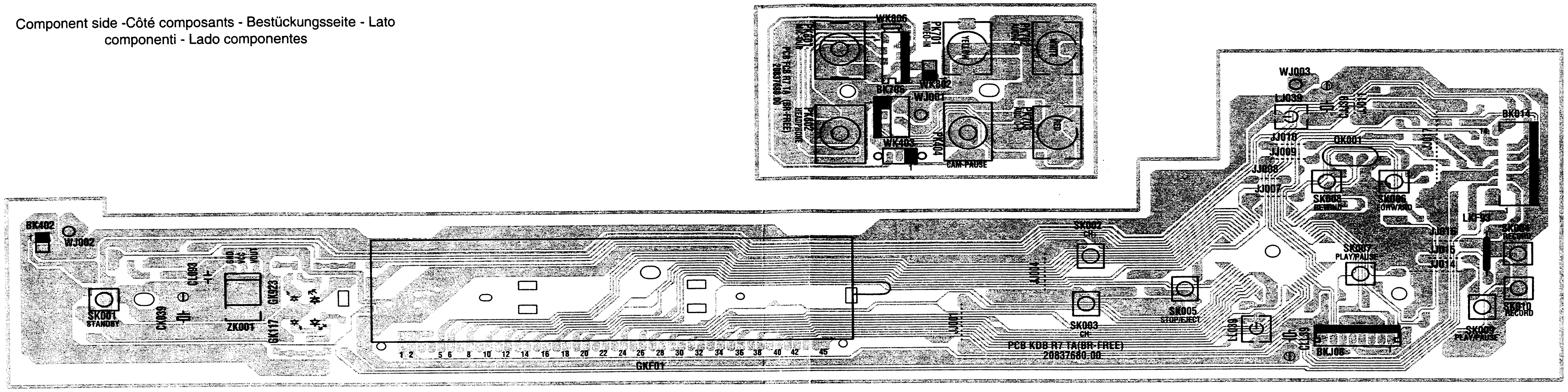
MODELS	PART	
	RL012	RJ012
SHU. & SW	3K	3K
JSB. & SW	0R	-
SW ONLY	-	3K

MODELS	PART	
	WK806	BK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

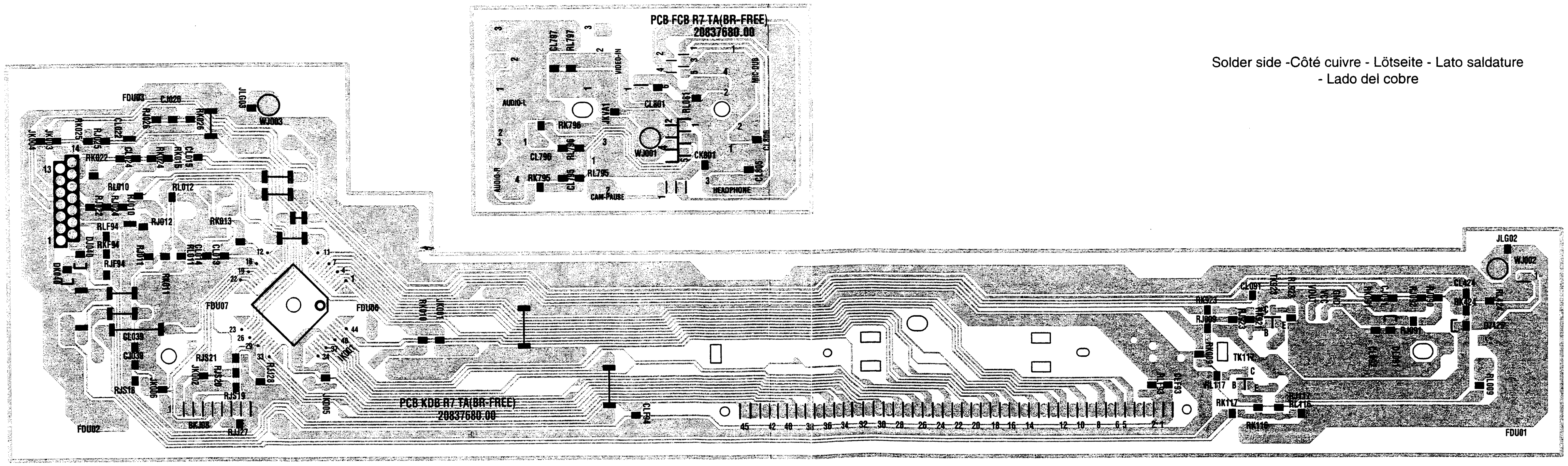
DESCRIPTION	TOOL	ECO	REC	WJ002	DJ040	CAM.P	MIC	HP	FAV
ASY KDB/FCB/JSB R7 TA22/TA3/IL2	98-7B	YES	NO	YES	0R	YES	NO	NO	3

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

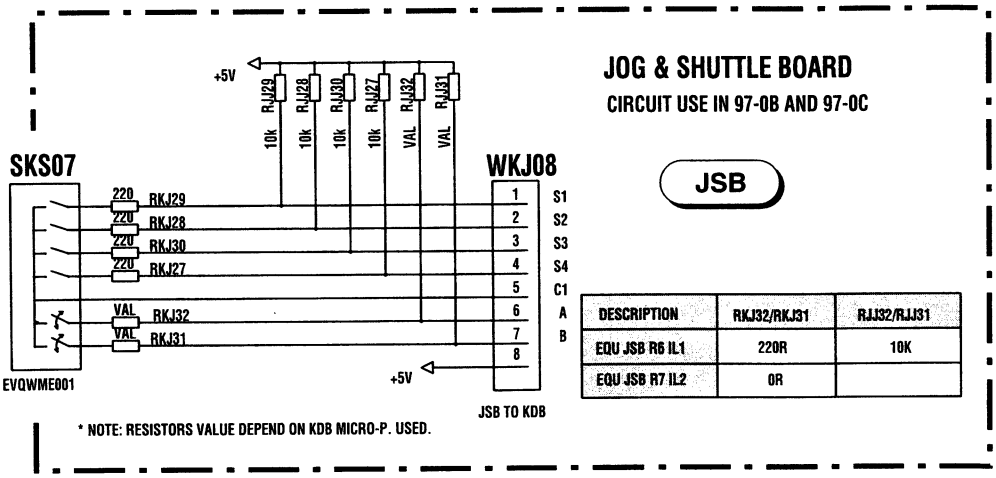

WK806
PK701 VIDEO-IN
BK706
WJ001
WK403
CAM-PAUSE
BK402
WJ002
SK001 STANDBY
ZK001
GKF01
SK003 CH-
SK005 STOP/EJECT
PCB KDB R7 TA(BR-FREE) 20837680.00
SK007 PLAY/PAUSE
SK006 FORWARD
SK010 RECORD
BK011
WJ003
QK001
BKJ06

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB FCB R7 TA(BR-FREE) 20837680.00
VIDEO-IN
AUDIO-L
AUDIO-R
HEADPHONE
CAM-PAUSE
WJ001
FDU03
WJ003
FDU07
FDU02
PCB KDB R7 TA(BR-FREE) 20837680.00
JLG02
WJ002
FDU01

JOG & SHUTTLE BOARD - PLATINE JOG & SHUTTLE - LEITERPLATTE JOG & SHUTTLE - PIASTRA JOG & SHUTTLE - PLATINA JOG & SHUTTLE

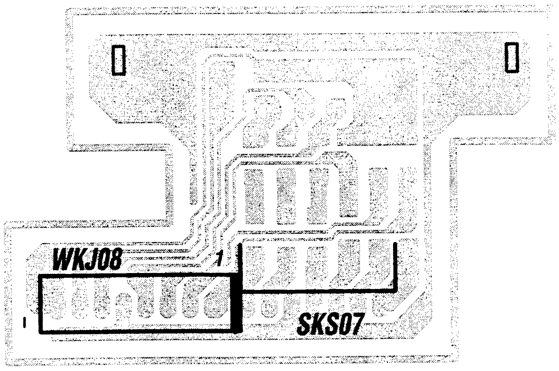
SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


JOG & SHUTTLE BOARD
CIRCUIT USE IN 97-0B AND 97-0C
JSB
+5V
RJJ29
RJJ28
RJJ30
RJJ27
RJJ32
RJJ31
10k
10k
10k
10k
VAL
VAL
SKS07
220
RKJ29
220
RKJ28
220
RKJ30
220
RKJ27
VAL
RKJ32
VAL
RKJ31
EVQWME001
WKJ08
1
2
3
4
5
6
7
8
S1
S2
S3
S4
C1
A
B
+5V
JSB TO KDB

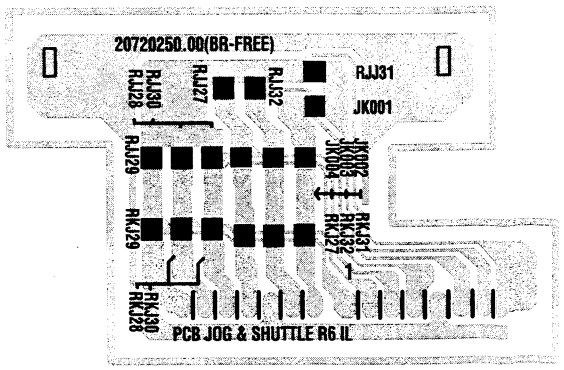
DESCRIPTION	RKJ32/RKJ31	RJJ32/RJJ31
EQU JSB R6 IL1	220R	10K
EQU JSB R7 IL2	0R	

* NOTE: RESISTORS VALUE DEPEND ON KDB MICRO-P. USED.

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


WKJ08
1
SKS07

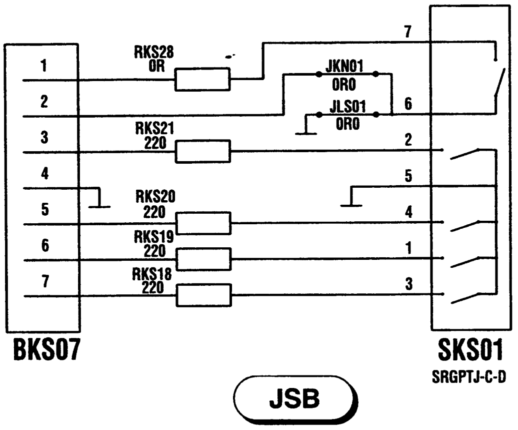
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


20720250.00(BR-FREE)
RJJ30
RJJ28
RJJ27
RJJ32
RJJ31
JK001
RJJ29
JK002
JK003
JK004
RKJ29
RKJ31
RKJ32
RKJ27
1
RKJ30
RKJ28
PCB JOG & SHUTTLE R6 IL

JOG & SHUTTLE BOARD - PLATINE JOG & SHUTTLE - LEITERPLATTE JOG & SHUTTLE - PIASTRA JOG & SHUTTLE - PLATINA JOG & SHUTTLE

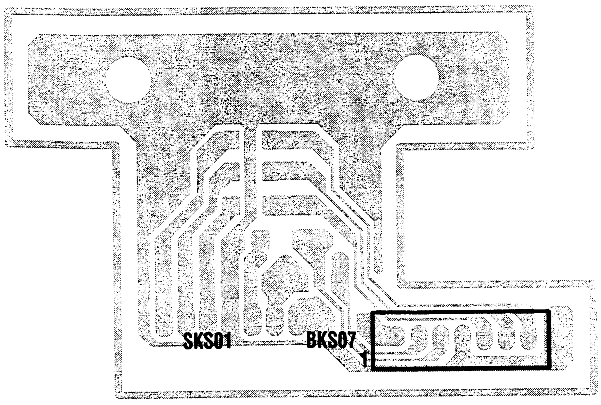
SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

FROM KDB WITH 8 BIT uP & NFDP	FROM KDB WITH 4 BIT uP & SFDP
72(97-3C)	PLAY_KEY(97-3C)
68(97-3C)	NC(97-3C)
30	21
GND	GND
29	20
28	19
27	18

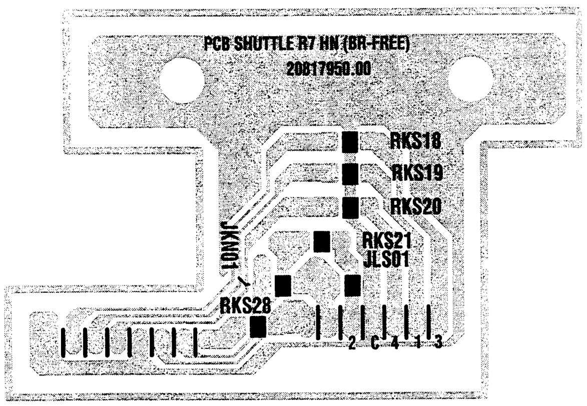

RKS28
0R
JKN01
0R0
JLS01
0R0
RKS21
220
RKS20
220
RKS19
220
RKS18
220
1
2
3
4
5
6
7
7
6
2
5
4
1
3
BKS07
SKS01
SRGPTJ-C-D
JSB

DESCRIPTION	PARTS	
	JKN01	JLS01
SHS R7 HN1 (SFDP)	-	*
SHS R7 HN2 (NFDP)	*	-

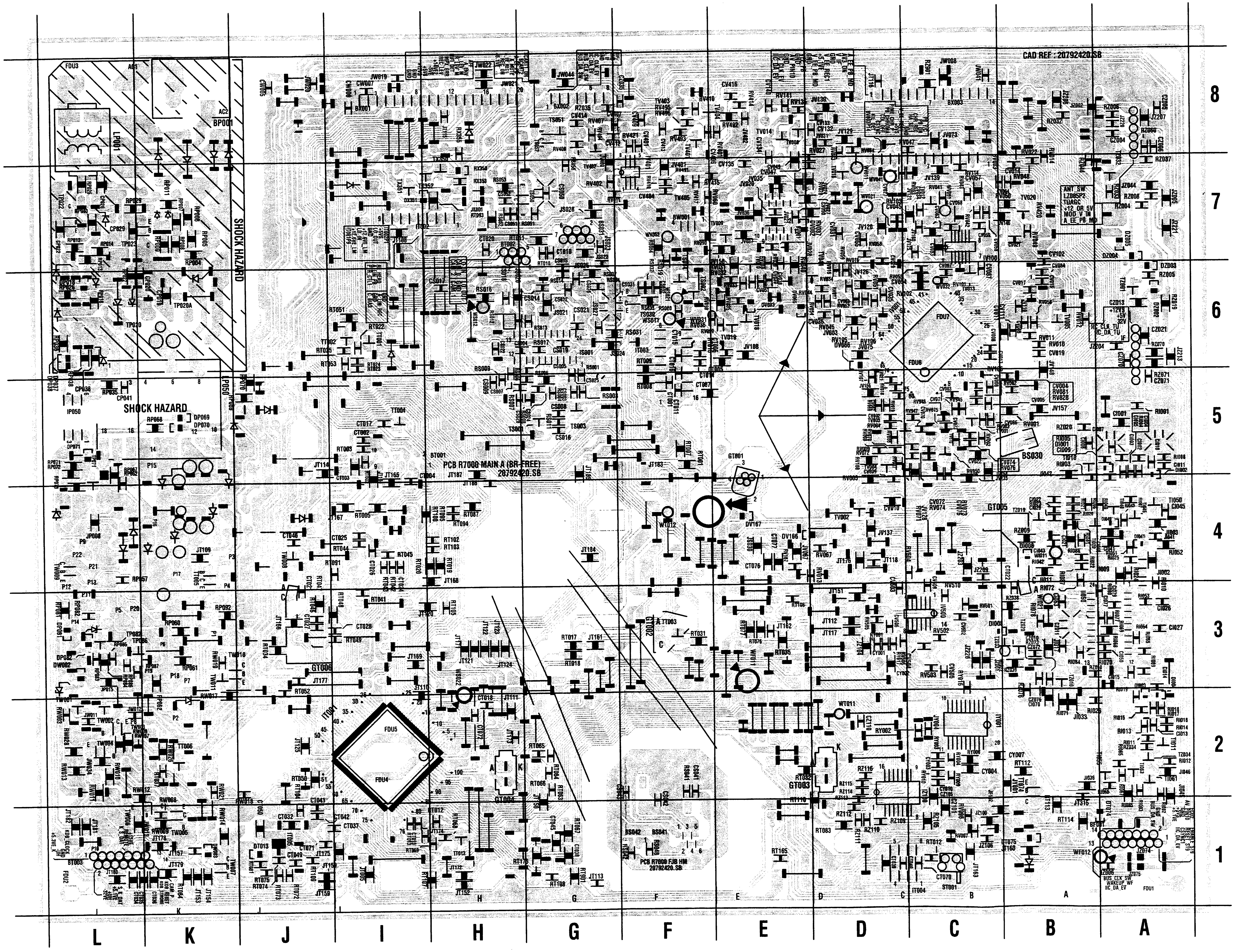
Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


SKS01
BKS07
1

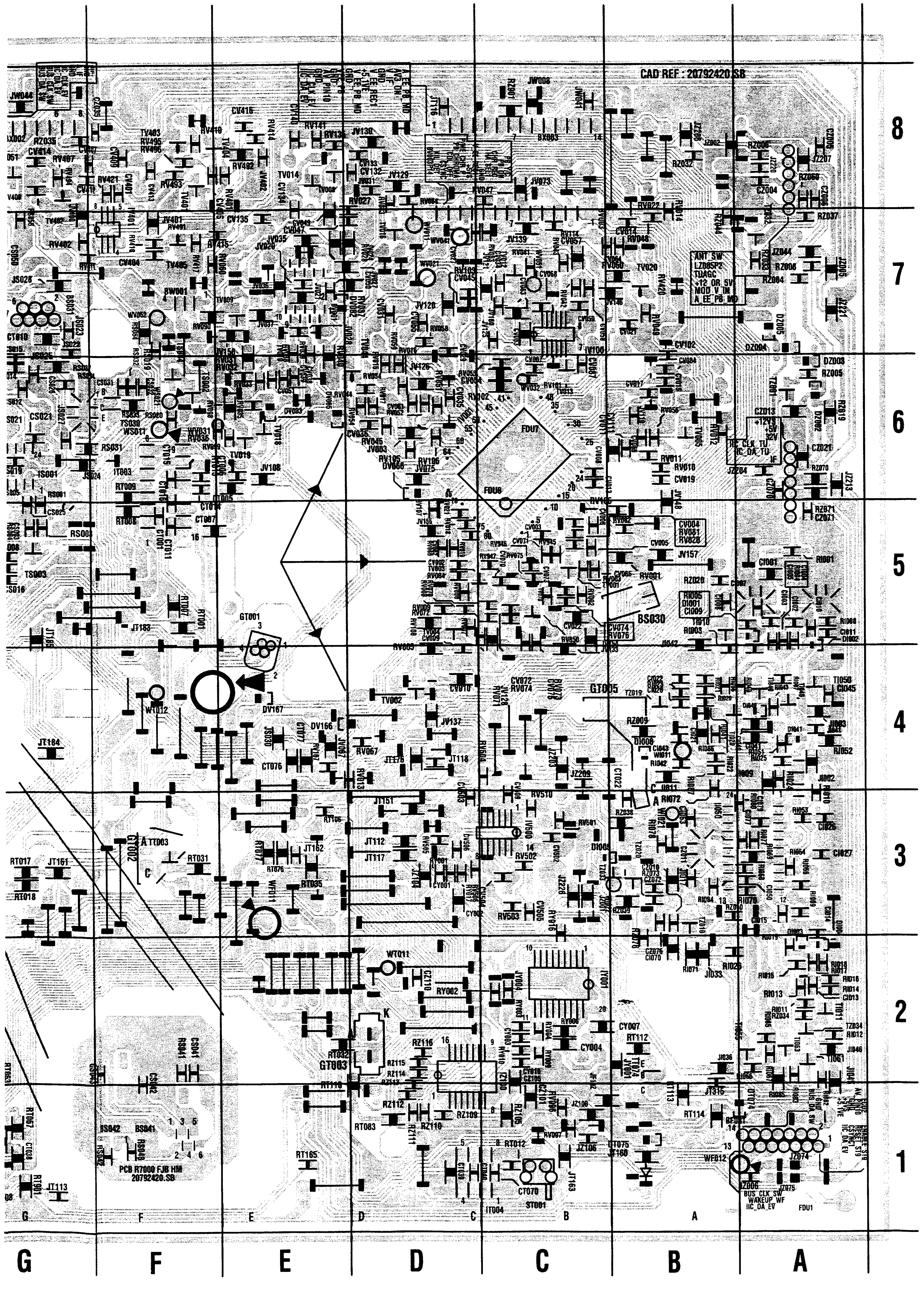
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB SHUTTLE R7 HN (BR-FREE)
20817950.00
RKS18
RKS19
RKS20
RKS21
JLS01
JKN01
RKS28
2
C
4
1
3

Main P.C.B. Solder side • Circuit imprimé de la platine principale côté cuivre • Hauptleiterplatte Lötseite
Piastra principale lato saldature • Platina principal lado del cobre


CAD REF : 20792420.SB
SHOCK HAZARD
SHOCK HAZARD
PCB R7000 MAIN A (BR-FREE)
20792420.SB
PCB R7000 FJ8 HM
20792420.SB
FDU3
FDU5
FDU4
FDU7
FDU6
8
7
6
5
4
3
2
1
L
K
J
I
H
G
F
E
D
C
B
A

a platine principale côté cuivre • Hauptleiterplatte Lötseite
lature • Platina principal lado del cobre



COMPONENTS LOCATION - LOCALISATION DES ELEMENTS - LAGE DER BAUTEILE
LOCALIZZAZIONE DEGLI ELEMENTI - LOCALIZACION DE LOS COMPONENTES

* SOLDER SIDE - COTE CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE

BF001	A1
BF001*	B1
BF002	A1
BP001	J8
BP001*	K8
BP067*	L5
BS030	B5
BS030*	B5
BS031	G7
BS031*	G7
BS041	F1
BS041*	F1
BS042	F1
BS042*	F1
BS043	F1
BS044	F1
BT001	H5
BT001*	H5
BT002	G7
BT002*	H7
BT003	K1
BT003*	L1
BV001	E7
BV003	D8
BV003*	C7
BV010	E7
BW001	F7
BW001*	F7
BX001	H8
BX001*	I8
BX002	G8
BX002*	G8
BX003	C8
BX003*	C8

CI001*	A5
CI002*	A5
CI003*	A5
CI004*	A5
CI005*	A5
CI007*	A5
CI008*	B5
CI009*	B5
CI010*	A5
CI011*	A5
CI013*	A2
CI014*	A3
CI015*	A3
CI020*	B4
CI021*	B4
CI022*	B4
CI024	A4
CI025	A3
CI026*	A3
CI027*	A3
CI028	A3
CI040*	A4
CI041*	A4
CI043*	B4
CI045*	A4
CI050*	A3
CI063*	B3
CI070*	B2
CI077*	A3
CI079*	A3
CP001	L8
CP010	J7
CP011	K7
CP019*	K6
CP020*	K6
CP021	K6
CP022*	L7
CP024	L6
CP025	L7
CP026*	L7
CP029*	L7
CP031	L6
CP038*	L5
CP040	L7
CP041*	L5
CP050	J6
CP051	L4
CP053	L4
CP054	L4
CP056	J5
CP057	J4
CP058	J3
CP061	J4
CP064	K4
CP065	L3
CP066	K4

CP067	K3
CP068	L4
CP071	L4
CP081	L3
CP082	L3
CS001	G6
CS002	G5
CS003*	G5
CS004*	G6
CS005*	G6
CS006	H5
CS007*	H5
CS008*	G5
CS009*	H5
CS010	H6
CS011	G6
CS012*	G6
CS014*	G6
CS015*	G7
CS016*	G5
CS017*	H6
CS018*	H6
CS019*	G6
CS020	G6
CS021*	G6
CS022*	H6
CS023	G6
CS024*	G5
CS025*	G5
CS026*	G6
CS028*	H5
CS030	G5
CS031*	F6
CS032*	F6
CS033	G7
CS041*	F2
CS042*	F2
CS043*	F2
CS050*	G7
CS051*	H7
CS052*	H7
CS053	H7
CS054	G7
CT001*	F5
CT002*	I5
CT003*	I5
CT004*	I5
CT005*	E6
CT006*	E6
CT007*	F5
CT008	F5
CT009	I3
CT010*	G7
CT011*	F5
CT012*	H1
CT013*	I1
CT014*	F5
CT015*	F6
CT016*	F6
CT017*	I5
CT018*	H2
CT020*	H7
CT021*	J4
CT022*	B4
CT023	I4
CT024*	I4
CT025*	I4
CT026*	I4
CT027*	J3
CT028*	I3
CT029	J4
CT030	I3
CT031	I4
CT032*	J1
CT034*	L1
CT035*	L1
CT036*	K1
CT037*	I1
CT038*	G1
CT039*	D1
CT040*	C1
CT041*	J2
CT042*	I1
CT043	J1
CT044	K1
CT045*	G1
CT046*	J4
CT049*	J1
CT050*	J1
CT051	J3
CT052	H8
CT053	J1
CT054	H8
CT060	J4
CT070*	C1
CT071*	J1
CT072*	H2
CT076*	E4

CT077*	E4
CV001	D5
CV002*	D5
CV003*	C5
CV004*	B5
CV005*	B5
CV006*	C5
CV008*	C6
CV009*	D5
CV010*	D4
CV011*	C6
CV012	B6
CV013	B6
CV014*	B7
CV015*	B6
CV016	B6
CV017*	B6
CV019*	B6
CV020	B7
CV021*	B7
CV022*	C5
CV023	B7
CV024	C7
CV025	C7
CV026	C7
CV027*	D7
CV028	D7
CV029*	D6
CV030	D7
CV031*	D7
CV032	D7
CV033	D6
CV034*	C7
CV035*	D6
CV036*	D6
CV037	B5
CV038*	E6
CV039*	E6
CV045*	D7
CV047*	E7
CV049*	E7
CV050*	D7
CV051*	E6
CV052	C7
CV053*	C7
CV054*	C6
CV055*	D7
CV057*	C7
CV058*	C7
CV059*	C7
CV061*	D6
CV062*	D5
CV063*	C7
CV064*	B7
CV065*	B6
CV067*	C6
CV068*	C7
CV070*	C5
CV071*	C5
CV072*	C4
CV073*	C5
CV074*	B5
CV075*	C4
CV083	C6
CV084*	B6
CV087*	C6
CV102*	B7
CV111*	B6
CV132*	D8
CV133*	D8
CV134*	E8
CV135*	E7
CV140*	E8
CV401*	F8
CV404*	F7
CV405*	E8
CV407*	G8
CV409*	F8
CV410	G8
CV412*	F8
CV413*	F8
CV414*	G8
CV416*	E8
CV501	C3
CV502*	C3
CV503*	D3
CV504*	C3
CV505*	C3
CV506*	D3
CV507	C3
CV508	C3
CV509*	C3
CW001	L2
CW002	L2
CW003	L2
CW004	L3
CW005	J8
CW006*	I8

CW007*	I8
CW008	J1
CY002*	D3
CY003*	C2
CY004*	C2
CY005	C2
CY006	C2
CY007*	B2
CY010*	C2
CZ004*	A8
CZ005*	A8
CZ006*	A8
CZ010*	B3
CZ011*	B3
CZ013*	A6
CZ015	J5
CZ018	A8
CZ021*	A6
CZ033	B5
CZ035*	F8
CZ070*	A6
CZ071*	A5
CZ072*	B3
CZ076*	B2
CZ101*	C1
CZ105*	C2
CZ110*	D2

DI001*	B5
DI002*	A5
DI003*	A3
DI003*	A3
DI005*	C3
DI006*	B4
DI022*	B4
DI040*	A4
DI041*	A4
DP001	K8
DP002	K8
DP003	K8
DP004	K8
DP005	K7
DP006	K7
DP018*	L6
DP019	L6
DP020	K7
DP025	L6
DP029	L6
DP031	L5
DP033	L7
DP037*	L6
DP038*	L6
DP040	L6
DP044	J6
DP051	L4
DP053	K4
DP054	L3
DP056	J5
DP061	K4
DP064	K4
DP066	K4
DP067	K4
DP068	K4
DP069*	K5
DP070*	K5
DP071*	L5
DP073	L4
DP081*	L3
DP082*	L3
DS001	I7
DT013*	J1
DT067	B1
DT074*	A1
DT075*	B1
DV001*	E7
DV002*	D7
DV003*	E6
DV065*	E6
DV066*	D6
DV166*	E4
DV167*	E4
DW001	L2
DW002*	L3
DW003*	K1
DW004	K2
DW086	I6
DW087	J4
DX351*	I7
DX352	H8
DZ001	J5
DZ002*	A6
DZ003*	A6
DZ004*	A7
DZ005*	A7

FI001	A5
FI002	A5
FI003	A2
FI010	A4
FI020	B4
FI030	B3
FI092	A2
FP001	L8
FP051	K5

II050	A3
II050*	B3
IP050	L5
IP050*	L5
IS001	G6
IS001*	G6
IS004*	F7
IT001*	J2
IT002	H7
IT002*	H7
IT003	F6
IT003*	F6
IT004	C1
IT004*	C1
IT005*	J1
IV001*	D6
IV100*	C7
IV401*	F7
IV500*	C3
IY001*	C2
IZ100*	C2

JF002	C4
JF003	D3
JF014	C3
JF102*	C2
JI001	A4
JI002*	A4
JI003*	A4
JI009*	A4
JI011*	B4
JI017*	B3
JI025	B3
JI032	B3
JI033*	B2
JI036*	B2
JI037	C4
JI040	C4
JI041*	A4
JI042*	B5
JI043	B3
JI044	A5
JI045*	A2
JI046*	A2
JP002	K6
JP003	K6
JP005	L5
JP006	L4
JP008*	L4
JP009	L3
JP013	K3
JP014	K3
JP015*	L3
JP017	K3
JP018	J3
JP019	K4
JP020	K3
JP041	L1
JS001	H7
JS002	H6
JS006	G6
JS007	F6
JS011	D4
JS012	D4
JS013	D3
JS014	I6
JS015	G8
JS020*	H6
JS021*	G6
JS022*	G7
JS023*	G7
JS024*	G6
JS025*	G7
JS027*	G6
JS028*	G7
JS030*	E4

JT001	J2
JT002	I3
JT003	J1
JT004	E1
JT005*	I1
JT006	H1
JT007	H1
JT008	I3
JT009	G1
JT010	H1
JT011	G1
JT012	I3
JT013	I3
JT014	I3
JT015	G2
JT016	G2
JT017	H3
JT018	F3
JT019	H3
JT020	H2
JT021	H3
JT022	H3
JT023	H3
JT024	H3
JT025	G3
JT026	I3
JT027	I4
JT029	I4
JT031	G3
JT032	G3
JT033	G3
JT034	F3
JT035	G3
JT036	F3
JT037	F3
JT038	F3
JT039	D2
JT040	E3
JT041	E2
JT042	E2
JT043	E2
JT044	E2
JT045	E2
JT046	E2
JT047	D2
JT048	D3
JT049	D3
JT050	D3
JT051	D3
JT052	J5
JT053	J5
JT054	D1
JT055	I4
JT056	F3
JT057	H5
JT058	F4
JT059	F4
JT060	E3
JT061	F4
JT062	E4
JT063	H5
JT064	E2
JT065	E1
JT066	I5
JT067	I6
JT068	J6
JT069	I6
JT070	I6
JT071	H6
JT072	H5
JT073	E3
JT074	I6
JT075	D4
JT076	C4
JT077	D4
JT078	I6
JT079	H6
JT080	H6
JT081	H6
JT082	H6
JT083	I7
JT084	G5
JT085	I7
JT086	I7
JT087	I7
JT088	H7
JT089	H7
JT090	I7
JT091	I7
JT092	I8
JT093	F5
JT094	F5
JT095	F5
JT096	I8
JT097	I8
JT098	I8
JT099	H8
JT100	H8
JT101	J4

JT103	F4
JT105	F4
JT108*	I7
JT109*	K4
JT110*	I3
JT111*	H2
JT112*	D3
JT113*	G1
JT114*	J5
JT115*	H8
JT116*	D8
JT117*	D3
JT118*	D4
JT120*	H3
JT121*	H3
JT122*	H3
JT123*	H3
JT124*	H3
JT125*	J2
JT126	E3
JT127	E1
JT128	D2
JT129	H1
JT130	J2
JT131	E2
JT132	D3
JT133	K2
JT134	C1
JT135	I1
JT136	I1
JT137	H1
JT138	J2
JT139	I4
JT140	I3
JT141	I3
JT142	J3
JT143	G3
JT144	J4
JT150*	G1
JT151*	D3
JT152*	H1
JT153*	K1
JT154*	K1
JT157*	K1
JT158*	J1
JT159*	J1
JT160*	B1
JT161*	G3
JT162*	E3
JT163*	C1
JT164*	I5
JT165*	I5
JT166*	J3
JT167*	I4
JT168*	H4
JT169*	I3
JT171*	H3
JT172*	H1
JT173*	H2
JT174*	H1
JT175*	J1
JT176*	D4
JT177*	J3
JT178*	K1
JT179*	K1
JT180*	L1
JT181*	L1
JT182*	L1
JT183*	F5
JT184*	G4
JT185*	G5
JT186*	H4
JT187*	H5
JT315*	B1
JV002	D3
JV003*	D6
JV004	D6
JV005	B8
JV006	B8
JV007	B8
JV008	B7
JV009	C8
JV011	F8
JV012	D7
JV013	D7
JV014	F7
JV016	D2
JV020*	E7
JV021*	E7
JV022	D3
JV024*	D7
JV025	B6
JV026	D3
JV027*	D7
JV028*	D7
JV030	C7
JV031*	D8
JV034	C5
JV035*	E7

JV036*	E7
JV037*	E7
JV039	E7
JV040	E7
JV042	F7
JV044	E3
JV047	E4
JV048	E3
JV049	D2
JV050	E3
JV056	D6
JV058	E6
JV060	E7
JV061	E7
JV062	B8
JV063	D2
JV066	F6
JV067*	E4
JV073*	C8
JV074	C8
JV075*	D6
JV088	D7
JV106	F7
JV107	F6
JV108*	E6
JV110*	B6
JV116	B6
JV118	C7
JV119	D7
JV120*	D7
JV121*	C7
JV123	D7
JV124	D6
JV125*	C7
JV126*	D6
JV128*	C4
JV129*	D8
JV130*	D8
JV131	D4
JV132	B5
JV133*	C5
JV136	C8
JV137*	D4
JV138	C7
JV139*	C7
JV141	D4
JV145	D5
JV148*	B5
JV149	B7
JV150	B7
JV151	A6
JV152	B6
JV153	B5
JV154*	C5
JV155*	D5
JV156*	E7
JV157*	B5
JV160*	C7
JV161	C4
JV162	C3
JV166	F5
JV167	F4
JV400*	G7
JV401*	F7
JV402*	E8
JW001	L2
JW002	K1
JW003	K2
JW004	L2
JW005	K2
JW006	K2
JW007	G8
JW008*	C8
JW009	K2
JW011*	L2
JW012*	L2
JW013	L2
JW014	L3
JW015*	L1
JW016	F7
JW017	J5
JW018	I8
JW019*	I8
JW020	J8
JW021*	H8
JW022*	H8
JW032	K2
JW034*	L2
JW035	J8
JW036	J8
JW037	I8
JW038	J8
JW039	J8
JW040	G8
JW041*	C8
JW042	F8
JW043	C8
JW044*	G8
JX001*	H7
JY001*	B2
JY003	C3
JY004*	C2
JY030	I4
JZ001*	C3
JZ002*	B8
JZ003	D8
JZ004	B7
JZ005*	A7
JZ006*	A1
JZ007	A7
JZ010	A4

JZ011	A3
JZ044*	A7
JZ074*	A1
JZ075*	A1
JZ100*	C1
JZ101	C1
JZ104*	D3
JZ110	D2
JZ203*	C4
JZ204*	A6
JZ206*	B8
JZ207*	A8
JZ209*	C4
JZ213*	A6
JZ220*	A8
JZ221*	A7
JZ223	B4
JZ224	D4
JZ225	D4
JZ226*	C3
JZ227	C4

LI020	B4
LI030	A3
LI040	A2
LI041	A2
LI069	B3
LP001	L8
LP001*	L8
LP050	J5
LP050*	K5
LP057	J4
LP064	L3
LP066	K4
LS001	H6
LS002	I7
LS030	F6
LS050	G7
LT001	G1
LT002	L1
LT003	B1
LT004	J1
LT075	B1
LV001	C5
LV003	C7
LV004	D7
LV005	C7
LV006	E7
LV007	B6
LV014	E8
LV070	C5
LV071	C5
LV072	C5
LV073	C5
LV134	E7
LV401	F7
LV402	F8
LV403	F8
LV410	F7
LV500	C3
LY001	B2
LZ001	A8
LZ004	B8
LZ005	C8
LZ006	B7
LZ011	B3
LZ032	B2
LZ074	A1
LZ075	A1

PI050	A4

QT001	I1
QT002	I1
QT003	I1
QV001	D6
QV002	D6
QV500	C3

RF001	A1
RI001*	A5
RI003*	B5
RI004*	A5
RI005*	B5
RI006*	B4
RI007*	A4
RI008*	A5
RI009*	A3
RI010*	A3
RI011*	A2
RI012*	A2
RI013*	A2
RI014*	A2
RI015*	A2

RI016*	A2
RI017*	A2
RI018*	A2
RI019*	A3
RI020*	B4
RI021*	B4
RI023*	B4
RI024*	A4
RI025*	A4
RI026*	B2
RI040*	A4
RI041*	B4
RI042*	B4
RI043*	A4
RI051*	A4
RI052*	A4
RI053*	A3
RI054*	A3
RI055*	A3
RI065*	A2
RI066*	A2
RI067*	A2
RI068*	A3
RI069*	A3
RI070*	A3
RI071*	B2
RI072*	B3
RI077*	A3
RI078*	B3
RI080*	A3
RI082*	A1
RI083*	A1
RI084*	B3
RI085*	A1
RI086*	B4
RI087*	B4
RI090	A2
RI091	A2
RP004*	K7
RP005*	K7
RP006*	K7
RP007*	K7
RP008*	K7
RP009*	K7
RP011*	K7
RP012*	L7
RP013*	L7
RP014*	L7
RP018*	L6
RP019	L7
RP020	K6
RP021	L7
RP022*	L6
RP025*	L7
RP026*	L6
RP027	L7
RP028	L7
RP029*	L7
RP030	L6
RP033	L6
RP035*	L5
RP036*	L6
RP037	L6
RP038*	L6
RP040*	L7
RP041	L7
RP052*	L5
RP053	L4
RP056	J5
RP057*	L4
RP058	L4
RP060*	K3
RP061*	K3
RP062*	K3
RP065	L3
RP068*	K5
RP069*	K5
RP070*	J5
RP071*	L5
RP072*	L5
RP073*	L5
RP077	K3
RP081*	L3
RP082*	L3
RP083*	L3
RP084*	L3
RP085*	L3
RP086*	L3
RP087*	K3
RP092*	K3
RS001*	G6
RS003*	G5
RS004*	G5
RS005*	G5
RS006*	H5
RS007*	H5
RS008*	G5
RS009*	H6
RS010	H6
RS011*	G5
RS012*	H6
RS013*	G6
RS014*	G6
RS016*	H6
RS017*	G6
RS018	G5
RS019*	F7
RS020*	F6
RS031*	F6
RS032*	F6
RS033*	F6

RS034*	G6
RS035	G5
RS036	F5
RS037*	G7
RS041*	F2
RS042*	F1
RS048*	F1
RS050	H8
RS051*	G7
RS052*	H7
RS053*	H7
RS054*	F7
RS055*	G7
RT001*	F5
RT002*	I5
RT003*	I5
RT004	I5
RT005*	I4
RT006	I4
RT007*	F5
RT008*	F5
RT009*	F6
RT010*	G7
RT011*	H7
RT012*	C1
RT013*	I1
RT014	E6
RT015*	F6
RT017*	G3
RT018*	G3
RT019*	H4
RT020*	I4
RT022*	I6
RT023*	I6
RT024*	I6
RT025*	J6
RT027	F4
RT030	I3
RT031*	F3
RT032*	E2
RT033	H1
RT034*	J3
RT035*	E3
RT036	K2
RT037*	K2
RT041*	I3
RT042*	I4
RT043*	I4
RT044*	I4
RT045*	I4
RT046*	J3
RT047*	J4
RT048*	I3
RT049*	I3
RT050*	J2
RT051*	I6
RT052*	J3
RT053*	I6
RT063*	G2
RT064*	G2
RT065*	G2
RT066*	G2
RT067*	G1
RT068*	H1
RT069*	I1
RT072*	J1
RT073*	J1
RT074*	J1
RT075*	J1
RT076*	E3
RT077*	E3
RT081*	J1
RT083*	D1
RT084*	K1
RT085	I1
RT087*	H4
RT088	G5
RT089	F5
RT090	J2
RT091*	I4
RT093*	H7
RT094*	H4
RT095*	H4
RT096	I5
RT100*	H4
RT102*	H4
RT103*	H4
RT104*	J2
RT105*	H3
RT106*	E3
RT107*	I1
RT108*	G1
RT109*	J1
RT110*	E1
RT111	G1
RT112*	B2
RT113*	B1
RT114*	B1
RT165*	E1
RT166	B1
RT176*	H1
RT901*	G1
RV001*	B5
RV002*	C5
RV003*	C5
RV004*	D5
RV005*	D4
RV006*	D5
RV007*	D5
RV008*	D5
RV009*	D5

RV010*	B6
RV011*	B6
RV012*	B6
RV013*	D4
RV014*	B7
RV015*	D6
RV016*	D6
RV017*	D6
RV018*	D5
RV019*	D5
RV020*	B5
RV021*	D5
RV022*	B8
RV027*	D8
RV028*	D7
RV031*	E6
RV032*	E6
RV033*	E6
RV034*	D6
RV035*	E6
RV036*	F6
RV037*	D7
RV038*	E6
RV039*	E6
RV040*	E7
RV041*	C7
RV042*	C7
RV043*	C7
RV044*	D6
RV045*	D6
RV047*	C8
RV048*	B7
RV049*	B7
RV050*	B7
RV051*	D6
RV052*	D6
RV053*	C7
RV054*	D6
RV055*	C6
RV056*	B6
RV058*	D7
RV059*	D7
RV060*	E7
RV066*	D5
RV067*	D4
RV070*	D5
RV071*	C4
RV072*	D5
RV073*	C4
RV074*	C4
RV075*	C5
RV076*	B5
RV081*	B5
RV082*	B5
RV083*	D8
RV084*	D8
RV090*	F7
RV092*	C1
RV096*	C1
RV098*	F6
RV099*	F6
RV101*	C6
RV102*	C6
RV103*	D7
RV105*	D6
RV106*	D6
RV107*	D5
RV108*	D5
RV114*	C7
RV134	D8
RV135*	E8
RV140	D8
RV141*	E8
RV167*	E4
RV196*	C5
RV401*	E8
RV402*	G7
RV403	E8
RV407*	G8
RV408*	G8
RV410*	F8
RV411*	F7
RV415*	E7
RV417*	F7
RV418*	F7
RV420*	B7
RV421*	F8
RV491*	E7
RV492*	E8
RV493*	F8
RV494*	G8
RV495*	F8
RV496*	F8
RV501*	C3
RV502*	C3
RV503*	C3
RV504*	C4
RV505*	D3
RV506*	D3
RV510*	C3
RV940	E6
RV941	E7
RV943	E4
RV945*	C5
RV946*	C5
RV947*	C5
RV948	E6
RV950*	C5
RW001	K1
RW002	K2
RW004	L2

RW005	L3
RW006*	L2
RW007*	L2
RW008*	K1
RW009*	K1
RW010*	L2
RW011*	L2
RW012*	L2
RW013*	L2
RW014*	K1
RW015	L3
RW016	J4
RW017*	K3
RW018*	J2
RW019*	K3
RW021*	K2
RW022	K3
RW023	L4
RW026*	K2
RW028*	L2
RW033*	L2
RW085	K2
RX353*	H7
RX355*	H8
RX356	H7
RX358*	H7
RY001*	D3
RY002*	D2
RY003*	C2
RY004*	C2
RY006*	C2
RY008	C2
RY009*	C2
RY010*	C2
RY012	C2
RY017*	D3
RY916*	C3
RY917	D2
RZ004*	A7
RZ005*	A6
RZ006*	A8
RZ008*	A7
RZ009*	B4
RZ010*	B3
RZ011	B3
RZ015	K3
RZ019*	A6
RZ020*	B5
RZ032*	B8
RZ033*	A7
RZ034*	A2
RZ035*	G8
RZ037*	A7
RZ038*	B3
RZ039*	B3
RZ044*	B7
RZ060*	A8
RZ070*	A6
RZ071*	A5
RZ072	B3
RZ073*	B3
RZ076*	B2
RZ105*	C1
RZ109*	D1
RZ110*	D1
RZ111*	D1
RZ112*	D1
RZ113*	D1
RZ114*	D2
RZ115*	D2
RZ116*	D2
RZ901*	C8

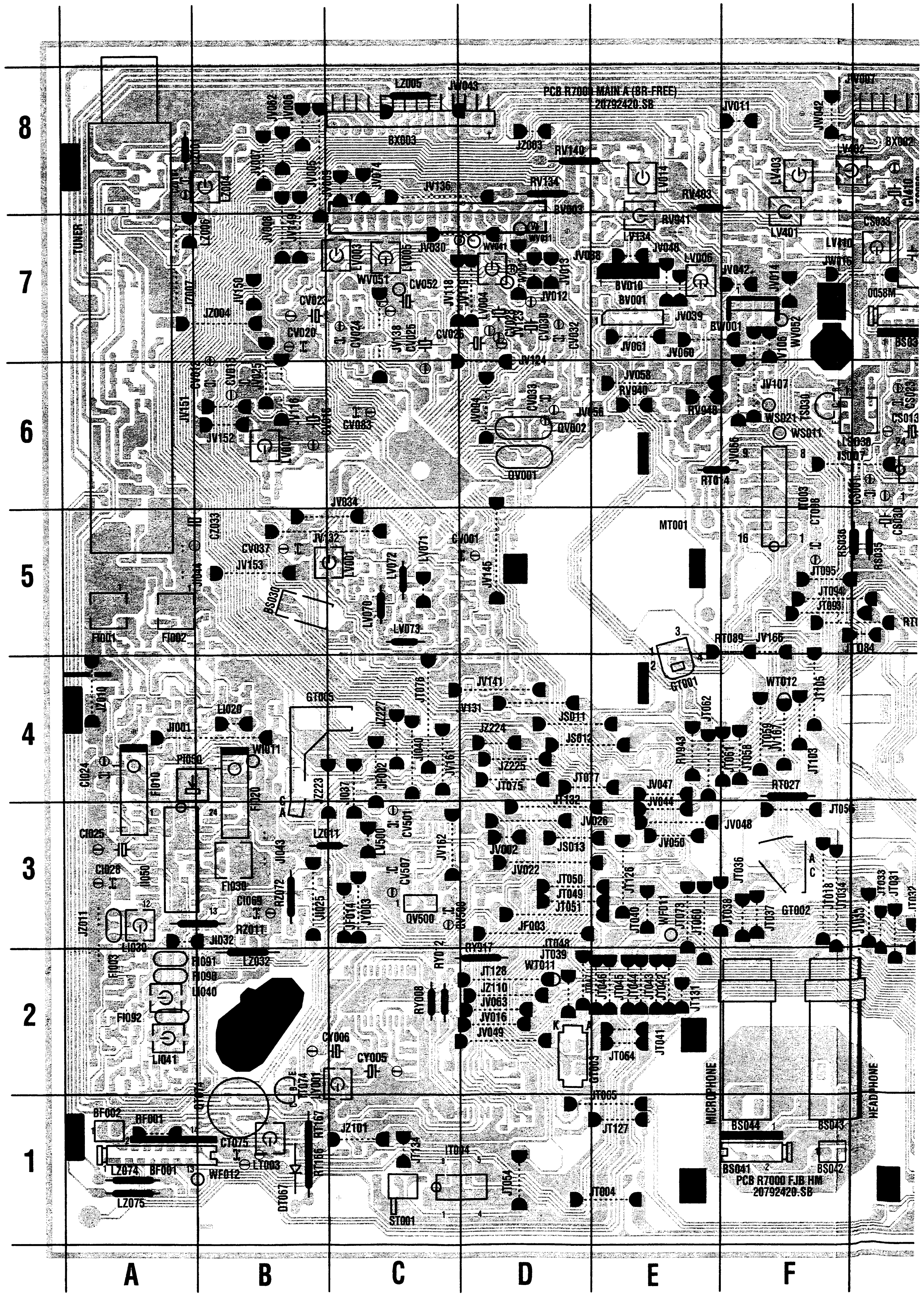
ST001	C1
ST001*	C1

GT001	E4
GT001*	E5
GT002	F3
GT003	E2
GT004	H2
GT004*	H2
GT005	B4
GT006	J3
GT006*	J3
TI010*	B5
TI011*	A2
TI020*	B4
TI040*	A4
TI045*	A4
TI050*	A4
TI055*	A2
TI061*	A2
TI063*	A2
TP020	L6
TP020*	L6
TP020A	K6
TP022	L7
TP022*	L7
TP023	K7
TP023*	L7

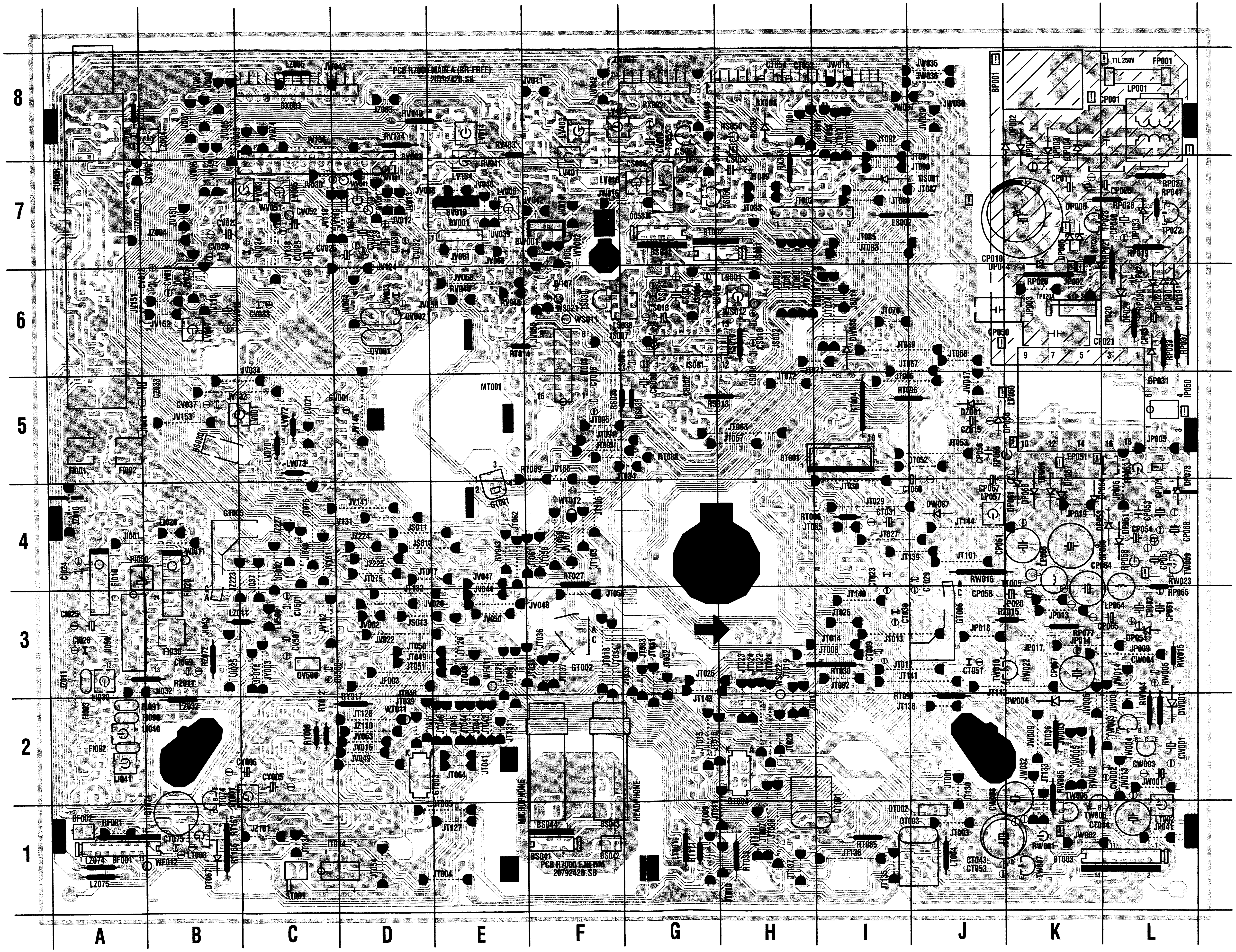
TP071*	L5
TP082*	L3
TP086*	L3
TS001*	H5
TS002*	F6
TS003*	G5
TS030	F6
TS030*	F6
TS050	G7
TS050*	G7
TS051*	G8
TS052	G8
TS052*	G8
TT001*	I6
TT002*	I6
TT003*	F3
TT004*	I5
TT005	K3
TT005*	K4
TT006*	K2
TT013*	H1
TT074	B2
TT074*	B2
TV001*	C5
TV002*	D4
TV003*	D5
TV004*	D5
TV005*	B6
TV008*	E8
TV009*	E7
TV010*	E6
TV012*	C7
TV013*	C6
TV014*	E8
TV016*	D7
TV018*	E6
TV019*	E6
TV020*	B7
TV044*	D7
TV070*	C5
TV401*	F8
TV402*	G7
TV403*	F8
TV404*	E8
TV405*	F7
TV414*	E8
TW001*	L3
TW002*	L2
TW003	L2
TW003*	L2
TW004	L2
TW004*	L2
TW005	K2
TW005*	K1
TW006	K1
TW006*	L1
TW007	K1
TW007*	K1
TW008*	J4
TW009	L4
TW009*	L4
TW010	J3
TW010*	K3
TW011*	K3
TX350*	H8
TX351*	I7
TX352*	H7
TZ001*	A6
TZ010*	B3
TZ019*	B4
TZ020*	B3
TZ032*	A7
TZ033*	C3
TZ034*	A2

WF01	B1
WF011	E3
WF011*	E3
WF012*	B1
WI011	B4
WI011*	B4
WI021*	B3
WI022*	C3
WS011	F6
WS011*	F6
WS012	H6
WS012*	H6
WS021	F6
WS021*	F6
WS022	H3
WS022*	H3
WT011	D2
WT011*	D2
WT012	F4
WT012*	F4
WV011	D7
WV011*	D7
WV021	D7
WV021*	D7
WV031*	F6
WV032*	C6
WV041	D7
WV041*	D7
WV051	C7
WV051*	C7
WV052	F7
WV052*	F7

Main P.C.B. components side - Circuit imprimé de la platine principale côté comp
componenti - Platina principal



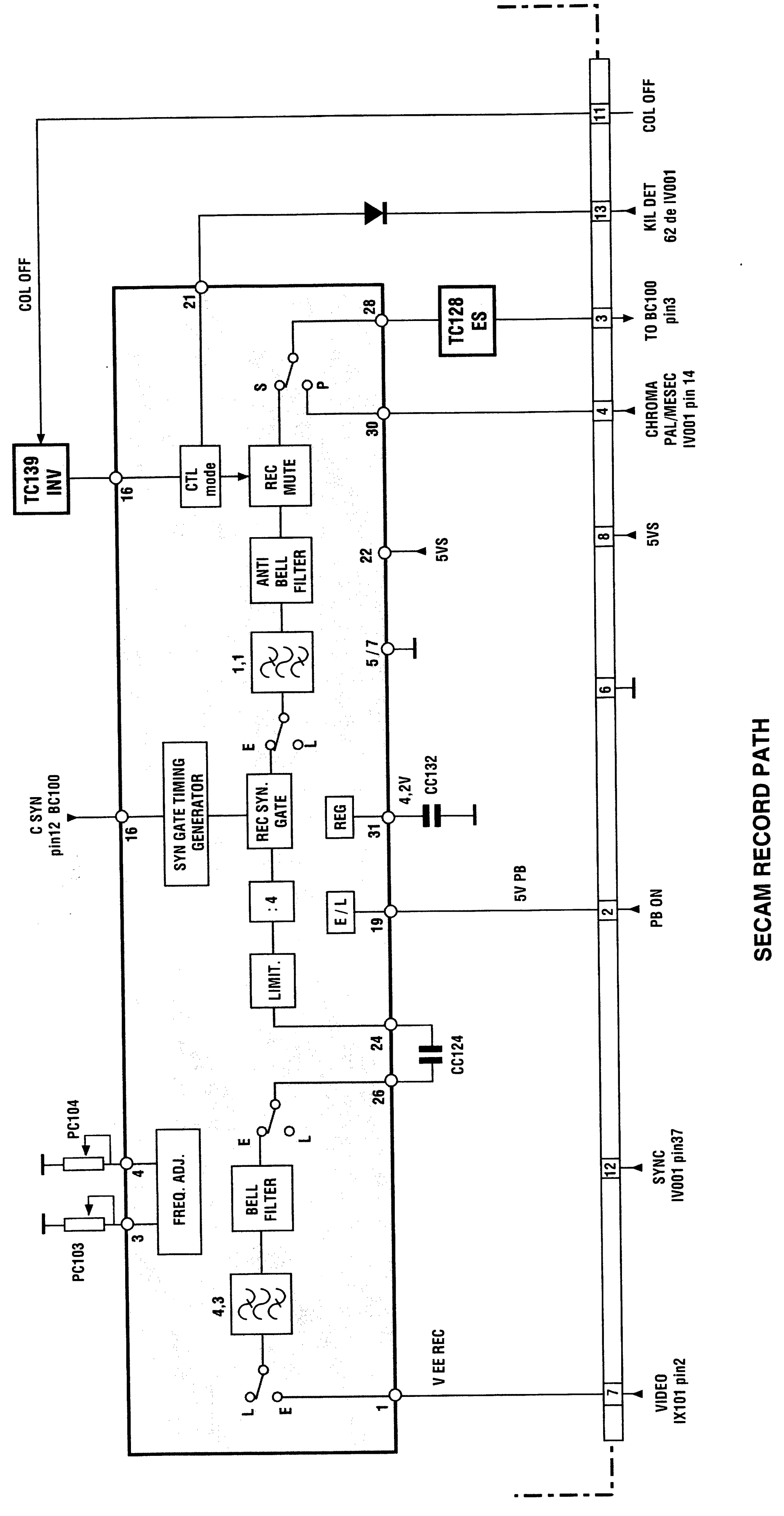
Main P.C.B. components side - Circuit imprimé de la platine principale côté composants - Hauptleiterplatte Bestückungsseite - Piastra principale lato componenti - Platina principal lado componentes



8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
TUNER
PCB R7000 MAIN A (BR-FREE)
20792420.SB
MICROPHONE
HEADPHONE
PCB R7000 FJB HM
20792420.SB
T1L 250V
FP001
LP001
CP001
BP001
MT001
GT001

SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

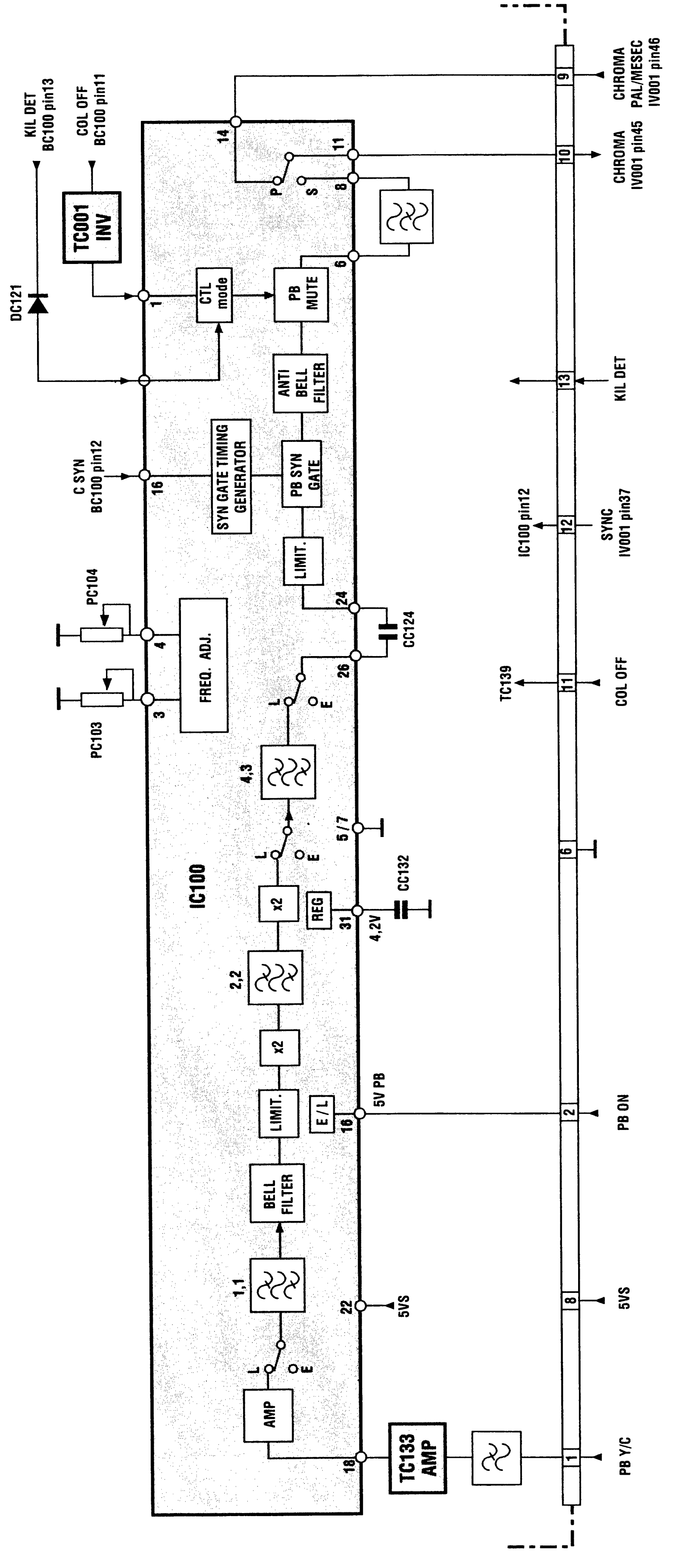
BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


COL OFF
11
COL OFF
13
KIL DET
62 de IV001
21
28
TC128
ES
3
TO BC100
pin3
S
P
30
4
CHROMA
PAL/MESEC
IV001 pin 14
TC139
INV
16
CTL
mode
REC
MUTE
ANTI
BELL
FILTER
22
5VS
8
5VS
1,1
5/7
6
E
L
SYN GATE TIMING
GENERATOR
REC SYN.
GATE
REG
31
4,2V
CC132
C SYN
pin12 BC100
16
:4
E/L
19
5V PB
2
PB ON
LIMIT.
24
CC124
26
E
L
PC104
4
FREQ. ADJ.
BELL
FILTER
12
SYNC
IV001 pin37
PC103
3
4,3
V EE REC
L
E
1
7
VIDEO
IX101 pin2

SECAM RECORD PATH

SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

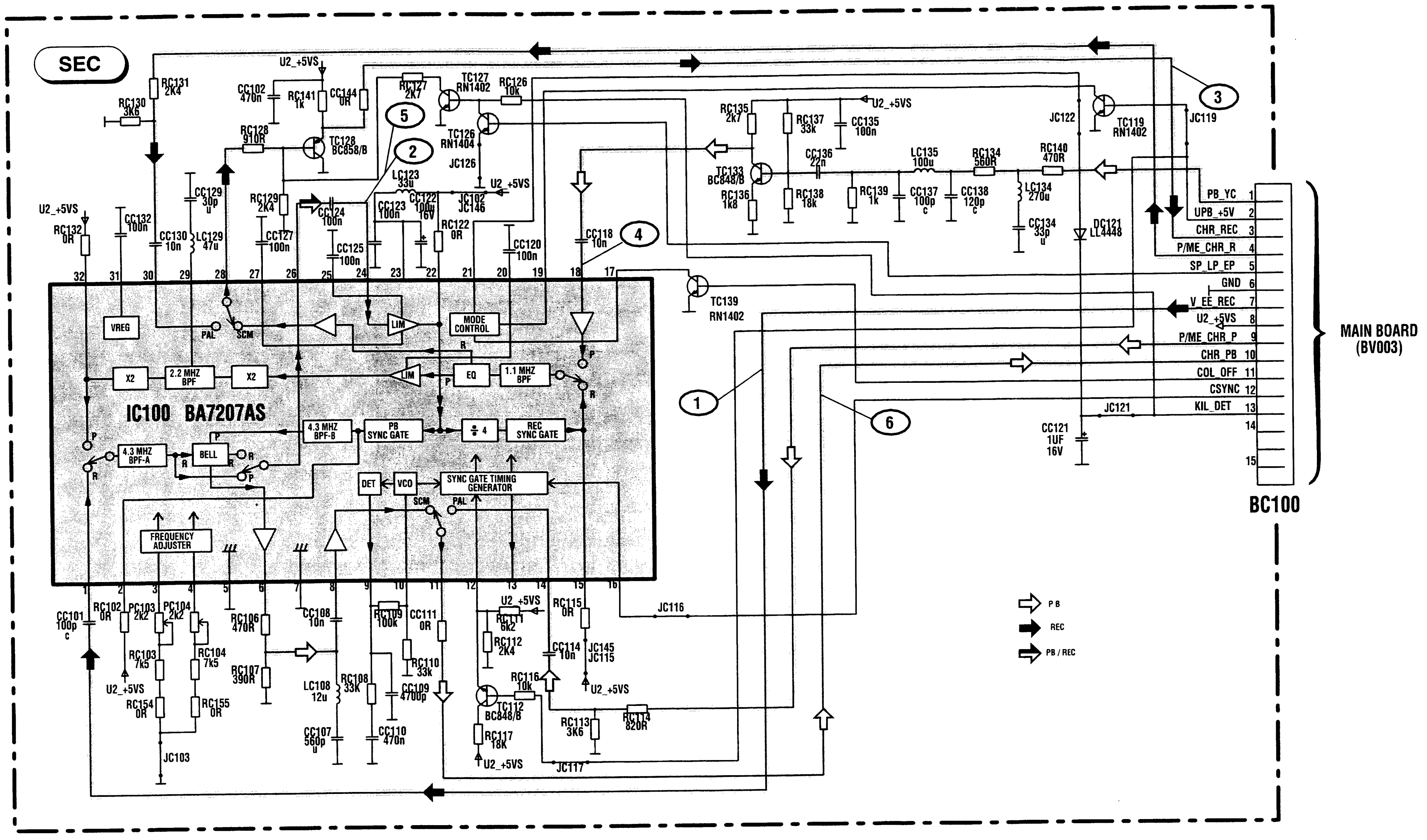
BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES

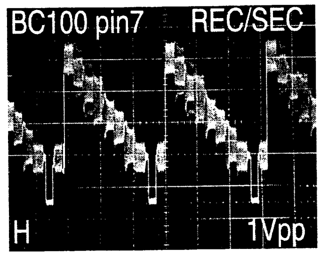

KIL DET BC100 pin13
COL OFF BC100 pin11
TC001 INV
DC121
CTL mode
PB MUTE
ANTI BELL FILTER
SYN GATE TIMING GENERATOR
PB SYN GATE
LIMIT.
C SYN BC100 pin12
PC104
PC103
FREQ. ADJ.
CC124
4,3
L
E
P
S
5/7
IC100
x2
REG
CC132
4,2V
2,2
LIMIT.
E/L
5V PB
BELL FILTER
1,1
5VS
AMP
TC133 AMP
1
3
4
6
8
11
14
16
18
22
24
26
31
9
10
13
12
11
6
2
8
1
CHROMA PAL/MESEC IV001 pin46
CHROMA IV001 pin45
KIL DET
IC100 pin12
SYNC IV001 pin37
TC139
COL OFF
PB ON
5VS
PB Y/C

SECAM PLAYBACK PATH

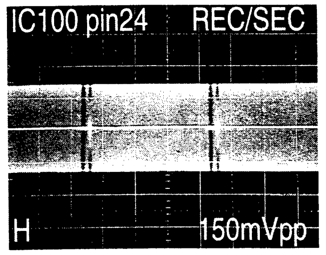
SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


SEC
IC100 BA7207AS
VREG
PAL
SCM
LIM
MODE CONTROL
EQ
1.1 MHZ BPF
2.2 MHZ BPF
X2
4.3 MHZ BPF-B
PB SYNC GATE
÷ 4
REC SYNC GATE
4.3 MHZ BPF-A
BELL
DET
VCO
SYNC GATE TIMING GENERATOR
FREQUENCY ADJUSTER
U2_+5VS
RC131 2K4
RC130 3K6
CC102 470n
RC141 1k
CC144 0R
RC127 2k7
TC127 RN1402
RC126 10k
TC126 RN1404
JC126
TC128 BC858/B
RC128 910R
RC135 2k7
RC137 33k
CC135 100n
CC136 22n
TC133 BC848/B
RC136 1k8
RC138 18k
RC139 1k
CC137 100p
CC138 120p
LC135 100u
RC134 560R
RC140 470R
LC134 270u
CC134 33p
DC121 LL4448
JC122
TC119 RN1402
JC119
LC123 33u
CC122 100u 16V
CC123 100n
CC124 100n
CC125 100n
JC102 JC146
RC122 0R
CC120 100n
CC118 10n
RC132 0R
CC132 100n
CC130 10n
LC129 47u
CC129 30p
RC129 2K4
CC127 100n
TC139 RN1402
CC101 100p
RC102 0R
PC103 2k2
PC104 2k2
RC103 7k5
RC104 7k5
RC106 470R
RC107 390R
RC154 0R
RC155 0R
JC103
CC108 10n
LC108 12u
CC107 560p
RC108 33K
RC109 100k
CC111 0R
CC109 4700p
CC110 470n
RC110 33k
U2_+5VS
RC111 6k2
RC112 2K4
RC115 0R
CC114 10n
JC145 JC115
RC116 10k
TC112 BC848/B
RC117 18K
RC113 3K6
RC114 820R
JC116
JC117
JC121
CC121 1UF 16V
PB_YC 1
UPB_+5V 2
CHR_REC 3
P/ME_CHR_R 4
SP_LP_EP 5
GND 6
V_EE_REC 7
U2_+5VS 8
P/ME_CHR_P 9
CHR_PB 10
COL_OFF 11
CSYNC 12
KIL_DET 13
14
15
BC100
MAIN BOARD (BV003)
① ② ③ ④ ⑤ ⑥
PB
REC
PB / REC



①



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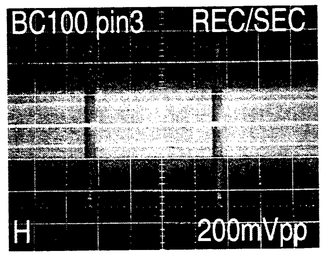

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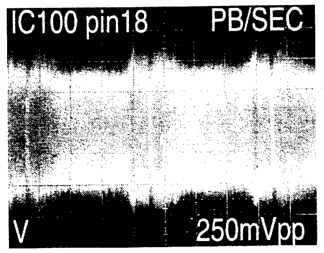

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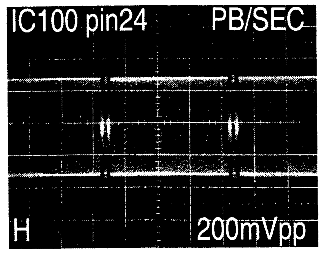

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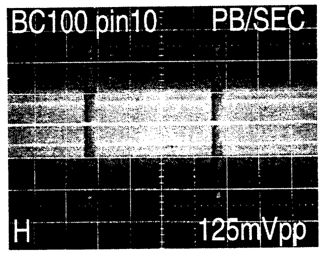
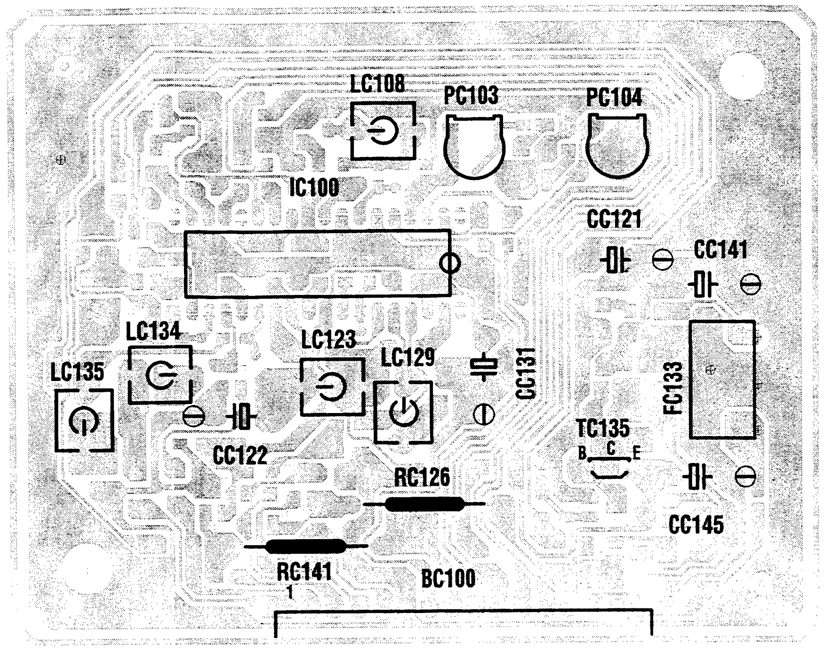


⑥

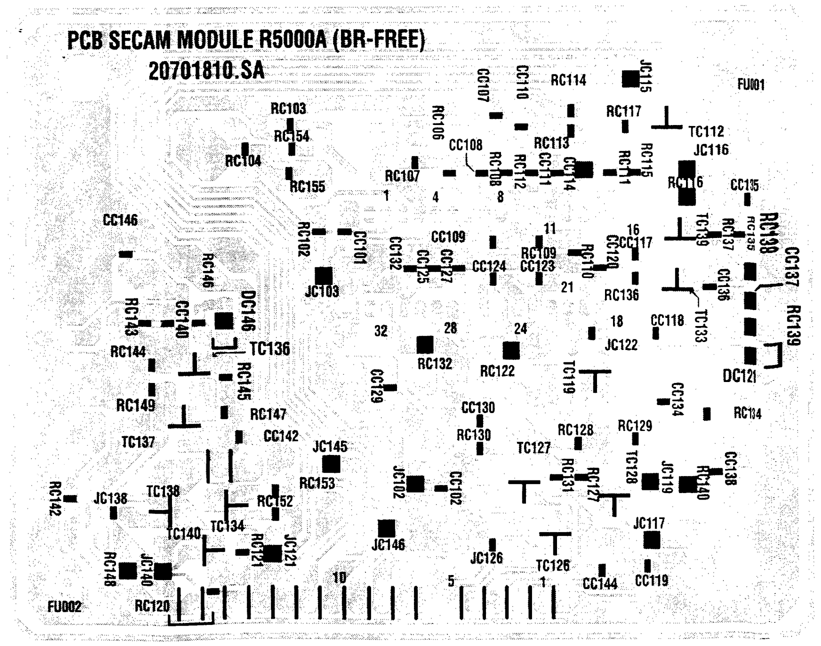
SECAM		MODE	
LOC	PIN	PLAY	REC
IC100	1	2,5	2,5
	2	5	5
	3	1,8	1,8
	4	1,8	1,8
	5	0	0
	6	1,8	1,8
	7	0	0
	8	2,9	2,9
	9	2	2
	10	1,9	1,9
	11	2,7	2,7
	12	2	1,5
	13	2,1	2,1
	14	2,9	2,9
	15	4,9	4,9

SECAM		MODE	
LOC	PIN	PLAY	REC
	16	0,6	0,6
	17	4,8	4,8
	18	2,5	2,5
	19	0	4,8
	20	2,5	0
	21	4,4	4,4
	22	4,9	4,9
	23	4,8	4,8
	24	2,2	2,2
	25	2,2	2,2
	26	1,9	1,9
	27	2,2	2,2
	28	2,3	2,3
	29	1,8	0,9
	30	3	3

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

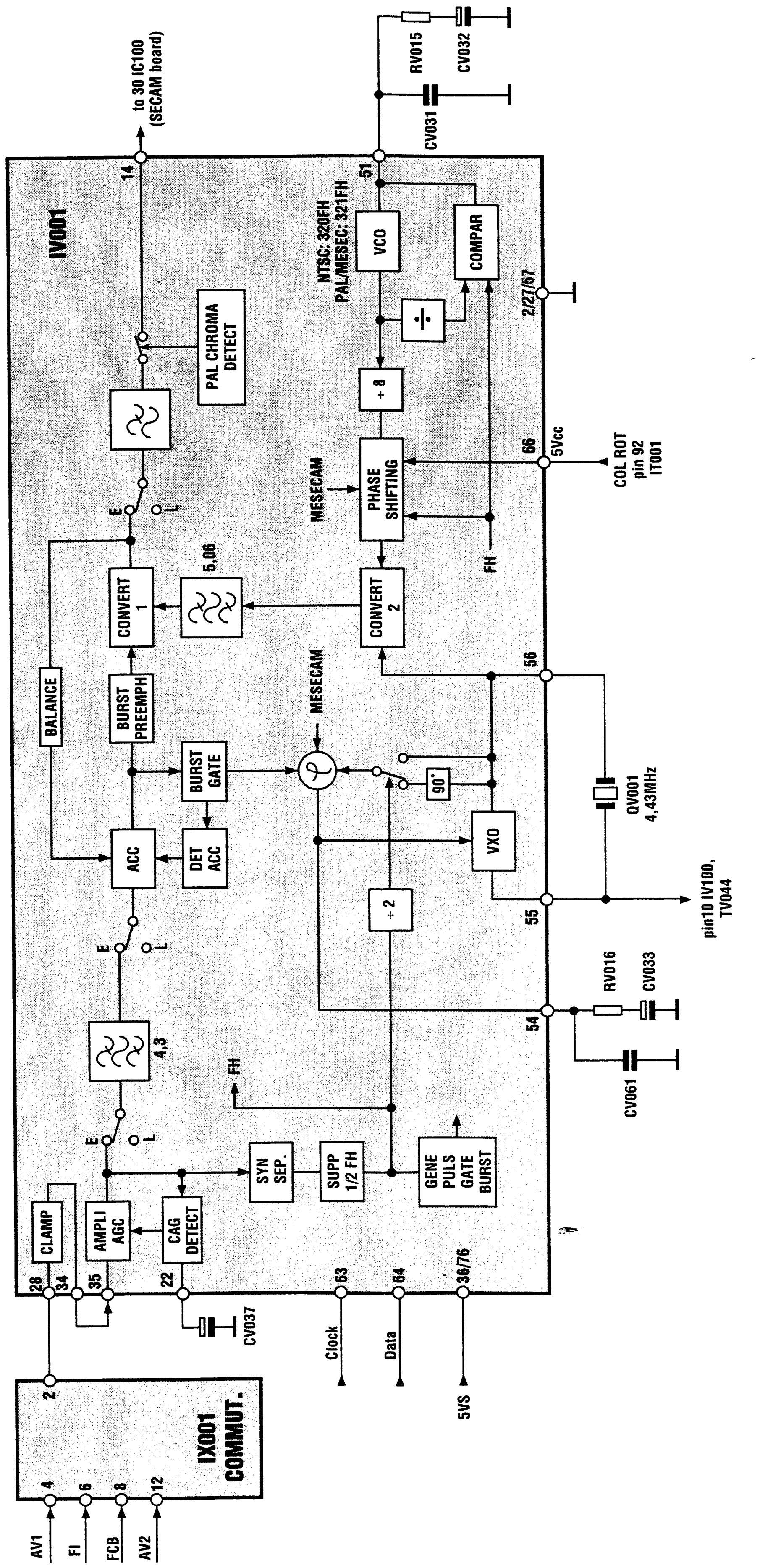

LC108
PC103
PC104
IC100
CC121
CC141
LC134
LC123
LC129
CC131
LC135
FC133
CC122
TC135
B C E
RC126
CC145
RC141
1
BC100

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

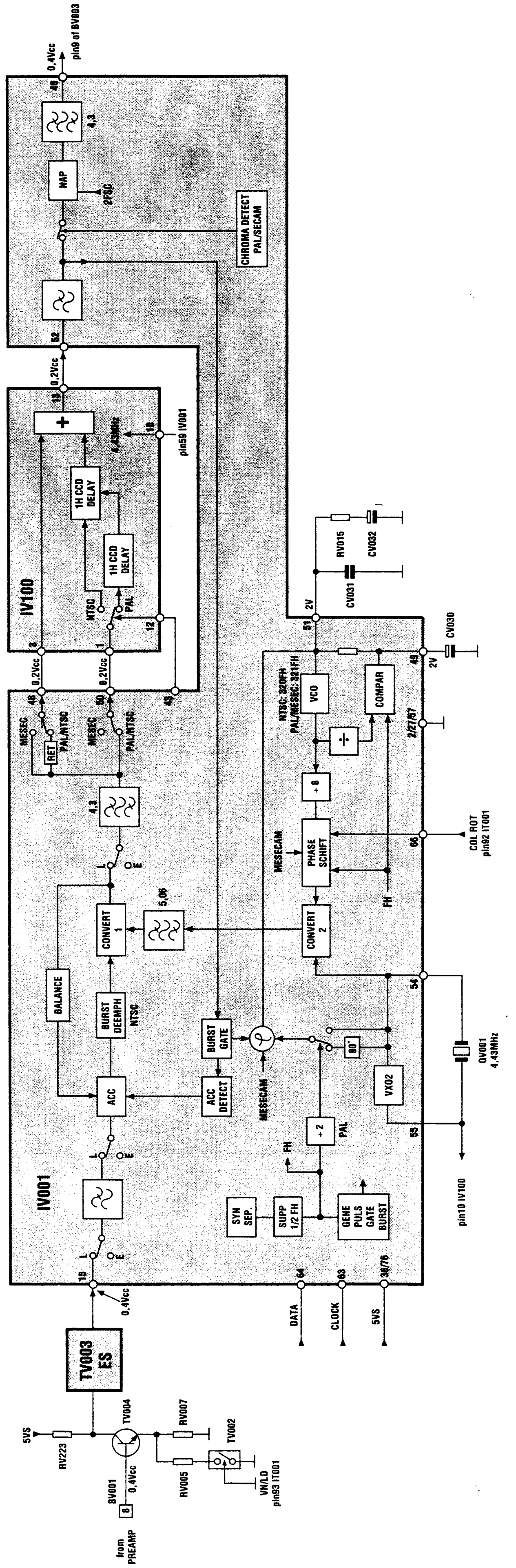

PCB SECAM MODULE R5000A (BR-FREE)
20701810.SA
FU001
FU002
RC103
RC154
RC104
RC155
RC107
CC108
RC113
RC117
TC112
JC116
CC115
CC146
RC102
CC101
CC109
RC109
CC124
CC123
RC136
TC139
DC146
RC143
RC144
TC136
RC132
RC122
JC122
DC121
RC149
TC137
RC147
CC142
JC145
CC130
RC130
RC128
TC127
RC129
RC142
JC138
TC138
TC140
TC134
RC152
RC153
JC102
JC146
JC126
TC126
CC144
CC119
JC117
RC148
RC120
RC114
RC121
JC121
1
4
5
8
10
11
16
18
21
24
28
32

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


to 30 IC100 (SECAM board)
IV001
14
51
RV015
CV032
CV031
NTSC: 320FH
PAL/MESEC: 321FH
VCO
COMPAR
2/27/67
PAL CHROMA DETECT
÷8
÷
MESECAM
PHASE SHIFTING
66
5Vcc
COL ROT pin 92 IT001
FH
CONVERT 1
CONVERT 2
5,06
E
L
BALANCE
BURST PREEMPH
BURST GATE
MESECAM
90°
56
QV001 4,43MHz
ACC
DET ACC
VXO
÷2
55
pin10 IV100, TV044
54
RV016
CV033
CV061
4,3
FH
SYN SEP.
SUPP 1/2 FH
GENE PULS GATE BURST
CLAMP
AMPLI AGC
CAG DETECT
28
34
35
22
63
64
36/76
CV037
Clock
Data
5VS
IX001 COMMUT.
2
4
6
8
12
AV1
FI
FCB
AV2

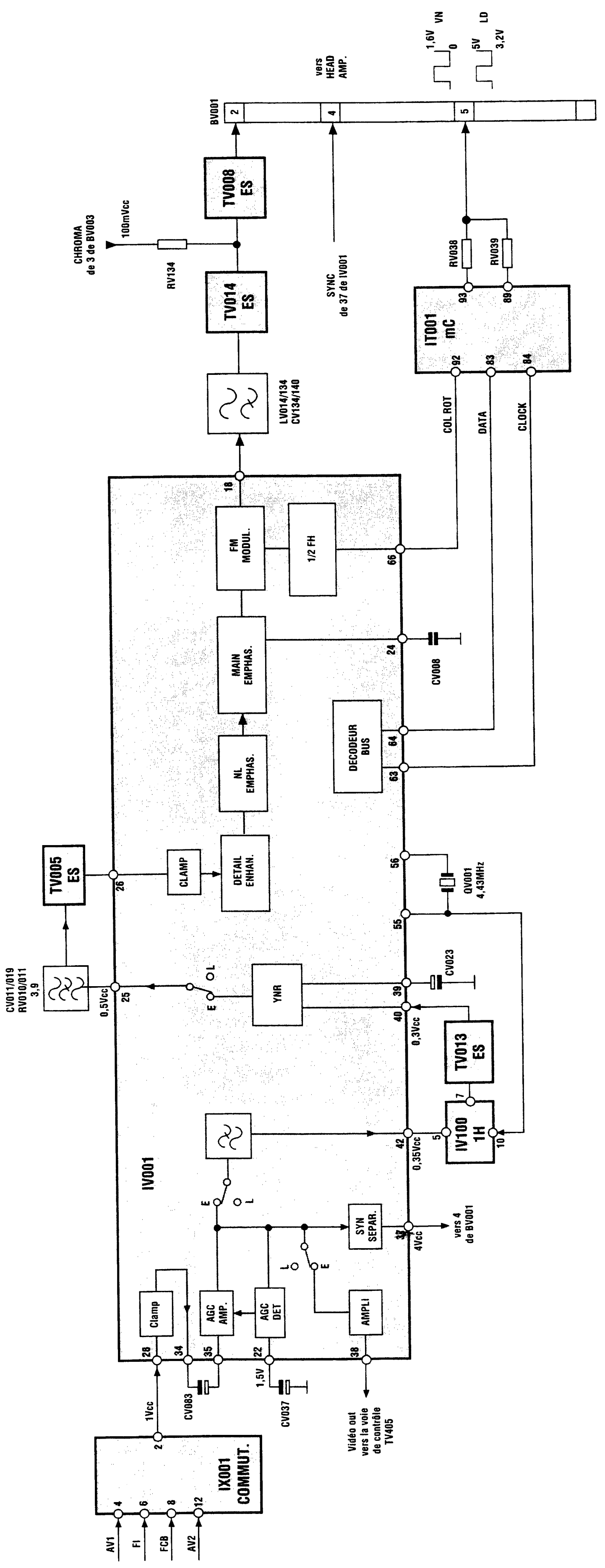
PAL RECORD PATH


0,4Vcc
pin8 of BV003
46
4,3
NAP
CHROMA DETECT PAL/SECAM
52
18
0,2Vcc
+
1H CCD DELAY
4,43MHz
19
pin59 IV001
IV100
NTSC
PAL
12
3
1
43
48
60
MESEC
PAL/NTSC
RET
RV015
CV032
CV031
2V
51
CV030
49
NTSC: 320FH
PAL/MESEC: 321FH
VCO
COMPAR
2/27/67
÷8
÷
MESECAM
PHASE SCHIFT
66
COL ROT pin92 IT001
FH
5,06
CONVERT 1
CONVERT 2
E
L
BALANCE
BURST DEEMPH
NTSC
BURST GATE
90°
54
QV001 4,43MHz
ACC
ACC DETECT
MESECAM
÷2
PAL
VXO2
55
IV001
SYN SEP.
SUPP 1/2 FH
GENE PULS GATE BURST
pin10 IV100
16
64
63
36/76
DATA
CLOCK
5VS
TV003 ES
5VS
RV223
TV004
RV007
TV002
BV001
0,4Vcc
RV005
VN/LD pin93 IT001
from PREAMP

PAL PLAYBACK PATH

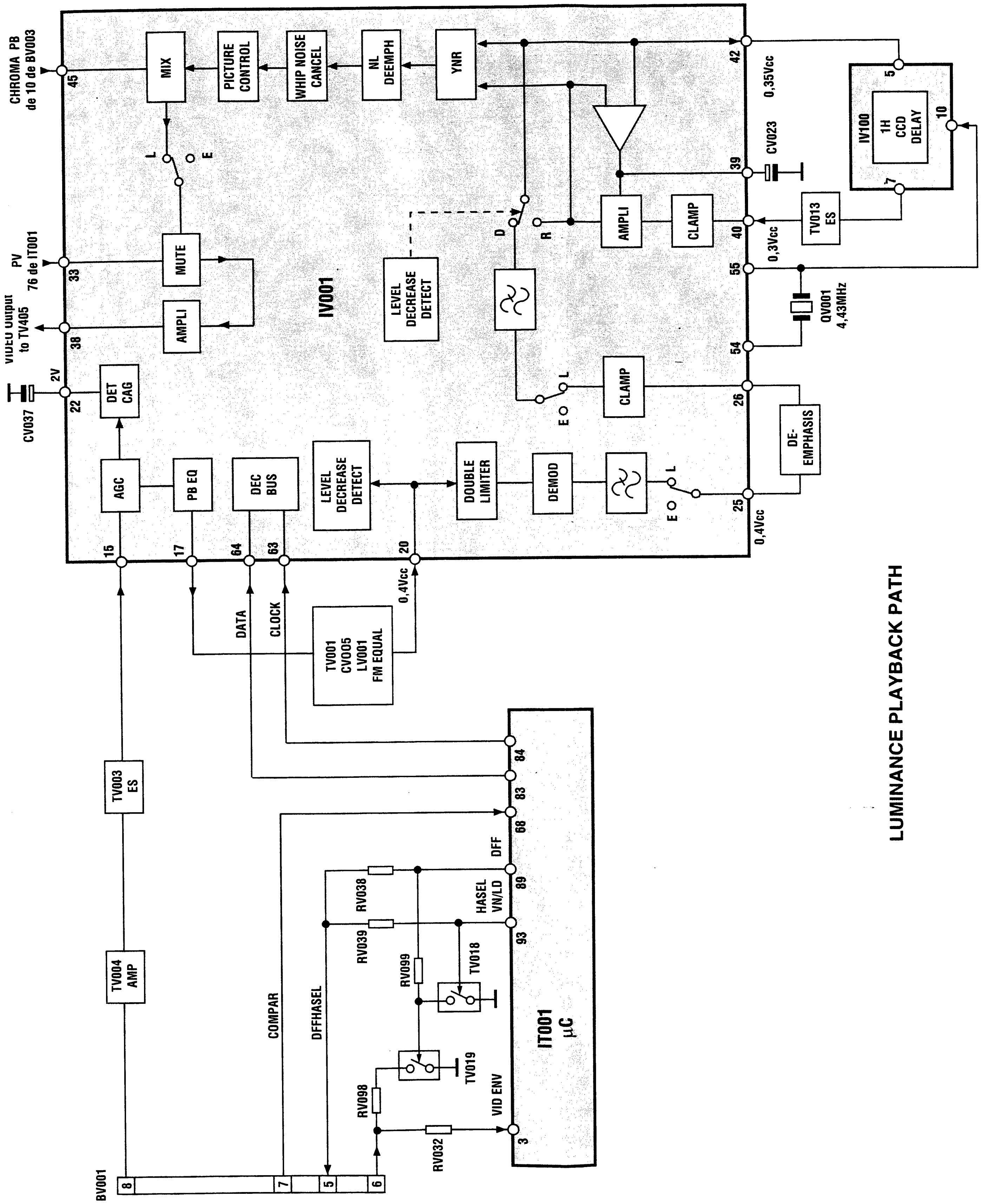
VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES



BV001
vers HEAD AMP.
1,6V VN 0
5V LD 3,2V
TV008 ES
CHROMA de 3 de BV003
100mVcc
RV134
TV014 ES
SYNC de 37 de IV001
RV038
RV039
IT001 mC
COL ROT
DATA
CLOCK
LV014/134 CV134/140
FM MODUL.
1/2 FH
MAIN EMPHAS.
CV008
DECODEUR BUS
NL EMPHAS.
DETAIL ENHAN.
CLAMP
TV005 ES
QV001 4,43MHz
CV023
CV011/019 RV010/011 3,9
0,5Vcc
YNR
0,3Vcc
TV013 ES
IV100 1H
0,35Vcc
IV001
SYN SEPAR.
4Vcc
vers 4 de BV001
Clamp
AGC AMP.
AGC DET
AMPLI
1Vcc
1,5V
CV083
CV037
Vidéo out vers la voie de contrôle TV405
IX001 COMMUT.
AV1
FI
FCB
AV2
E
L

LUMINANCE RECORD PATH

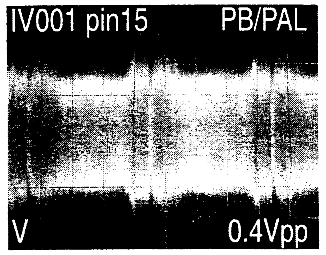


CHROMA PB de 10 de BV003
45
MIX
PICTURE CONTROL
WHIP NOISE CANCEL
NL DEEMPH
YNR
42
0,35Vcc
IV100
1H CCD DELAY
5
10
7
39
CV023
L
E
D
R
AMPLI
CLAMP
40
0,3Vcc
TV013 ES
PV 76 de IT001
33
MUTE
AMPLI
Video output to TV405
38
IV001
LEVEL DECREASE DETECT
55
QV001 4,43MHz
54
2V
22
CV037
DET CAG
CLAMP
26
DE-EMPHASIS
AGC
PB EQ
DEC BUS
LEVEL DECREASE DETECT
DOUBLE LIMITER
DEMOD
25
0,4Vcc
15
17
64
63
20
0,4Vcc
DATA
CLOCK
TV001 CV005 LV001 FM EQUAL
TV003 ES
84
83
68
DFF
89
HASEL VN/LD
93
RV038
RV039
RV099
TV018
TV004 AMP
COMPAR
DFFHASEL
RV098
TV019
IT001 µC
VID ENV
3
RV032
BV001
8
7
5
6

LUMINANCE PLAYBACK PATH

MEASUREMENTS VIDEO SIGNAL PROCESSING - MESURES TRAITEMENT VIDEO - MESSUNGEN VIDEO SIGNALVERARBEITUNG - MISURE ELABORAZIONE VIDEO - MEDIDAS TRATAMIENTO VIDEO

VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
IV001	1	NC	NC	NC
	2	0	0	0
	3	NC	NC	NC
	4	NC	NC	NC
	5	NC	NC	NC
	6	NC	NC	NC
	7	NC	NC	NC
	8	NC	NC	NC
	9	NC	NC	NC
	10	NC	NC	NC
	11	NC	NC	NC
	12	2,3	2,3	2,3
	13	1,6	1,8	1,6
	14	2,7	0	2,5
	15	4,1	3,1	4,1
	16	1,5	1,5	1,5
	17	2,4	2,4	2,4
	18	1,9	1,9	1,9
	19	0,3	0,5	4
	20	4,5	2,5	4,4
	21	0	4,1	0
	22	15	1,6	1,5
	23	NC	NC	NC
	24	2,4	0	2,4
	25	1,7	1,8	1,8
	26	3	3	3
	27	0	0	0
	28	2	1,2	2
	29	2,2	2,4	2,2
	30	1,7	0	1,7
	31	4	4	4
	32	1,7	0	1,7
	33	0,2	0,2	0,2
	34	2,1	1,9	2,1
	35	3	3	3
	36	4,8	4,8	4,8
	37	0,6	0,6	0,6
	38	1,8	1,8	1,8
	39	3	3	3
	40	3	3	3
	41	5	5	5
	42	1,9	1,9	1,9
	43	0	0	0
	44	1,6	1,6	1,6
	45	1,8	1,8	1,8
	46	0	1,8	0
	47	5	5	5
	48	2,7	2,7	2,7
	49	0	0	4
	50	2,7	2,7	2,7
	51	3,9	3,9	3,9
	52	3,1	3,1	3,1
	53	0	0	0
	54	2,1	2,1	2,1
	55	3,9	2,8	3,9
	56	2,4	2,4	2,4
	57	0	0	0
	58	1,4	2,7	1,4
	59	1,5	1,5	1,5
	60	0,6	0,6	0,6
	61	0	2,9	2,9
	62	4,1	0	4,1
	63	4,1	4,1	4,1
	64	3,9	3,9	3,9
	65	1,5	1,5	1,5
	66	0,4	0,4	0,4
	67	0,4	0,4	0,4
	68	NC	NC	NC
	69	2,1	2,1	2,1
	70	NC	NC	NC
	71	NC	NC	NC
	72	NC	NC	NC
	73	NC	NC	NC
	74	NC	NC	NC
	75	NC	NC	NC
	76	5	5	5
	77	NC	NC	NC
	78	4	4	4
	79	NC	NC	NC
	80	NC	NC	NC
IV100	1	2,5	2,5	2,5
	2	5	5	5
	3	2,5	2,5	2,5
	4	0	0	0
	5	2,3	2,3	2,3
	6	0	0	0
	7	1,5	1,5	1,5
	8	9	9	9
	9	2	2	2
	10	0,8	0,8	0,8
	11	0	0	0
	12	0	0	0
	13	1,9	1,9	1,9
	14	0	0	0
IV401	1	1,6	1,6	1,6
	2	0,1	0,1	0,1
	3	1,5	1,5	1,5
	4	NC	NC	NC
	5	NC	NC	NC
	6	5	5	5
	7	2,2	2,2	2,2
	8	0	0	0
IV500	1	0	0	0
	2	2,3	2,3	2,3
	3	2,9	2,9	2,9
	4	3,6	3,6	3,6
	5	4,1	4,1	4,1
	6	0	0	0
	7	4,6	4,6	4,6
	8	4,7	4,7	4,7
	9	3,7	3,7	3,7
	10	3,8	3,8	3,8
	11	2,6	2,6	2,6
	12	2,1	2,1	2,1
	13	4,8	4,8	4,8
	14	0	0	0
TV001	B	2,4	2,4	2,4
	E	1,7	1,7	1,7
	C	3	3	3
TV002	B	0	0	0
	E	0	0	0
	C	0	0	0
TV003	B	3,2	3,2	3,2
	E	2,5	2,5	2,5
	C	5	5	5
TV004	B	1,7	1,7	1,7
	E	1	1	1
	C	3,2	3,2	3,2
TV005	B	1,8	1,8	1,8
	E	2,4	2,4	2,4
	C	0	0	0
TV008	B	1,2	1,2	1,2
	E	0,6	0,6	0,6
	C	5	5	5
TV009	B	5	5	0
	E	5	5	5
	C	1,9	1,9	5
TV010	B	0,4	0,4	3,9
	E	0	0	0
	C	5	5	0
TV012	B	1,2	1,9	1,9
	E	1,3	1,3	1,3
	C	5	5	5
TV013	B	1,5	1,5	1,5
	E	2,1	2,1	2,1
	C	0	0	0
TV014	B	1,8	1,8	1,8
	E	1,2	1,2	1,2
	C	5	5	5
TV401	B	4,1	4,1	4,1
	E	1,8	1,8	1,8
	C	0	0	0
TV402	B	2,2	2,2	2,2
	E	1,5	1,5	1,5
	C	5	5	5
TV403	B	1,5	1,5	1,5
	E	2,2	2,2	2,2
	C	0	0	0
TV404	B	4,1	4,1	4,1
	E	0	0	0
	C	0	0	0
TV405	B	0,9	0,9	0,9
	E	1,6	1,6	1,6
	C	0	0	0
TX350	B	0	5	0
	E	0	0	0
	C	13,8	0	13,8
TX351	B	13,8	0	13,2
	E	13,9	2,6	13,3
	C	0	12,6	0
TX352	B	0	0	0
	E	0	0	0
	C	0	6	0



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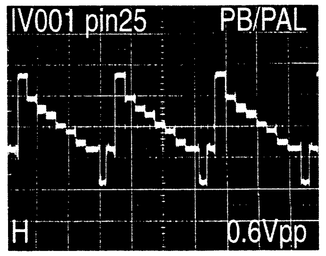

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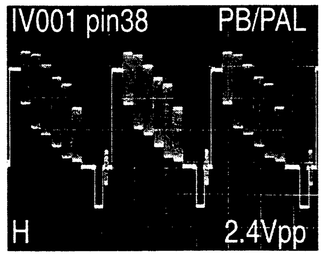

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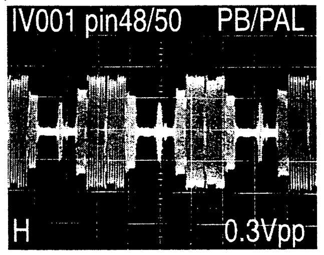

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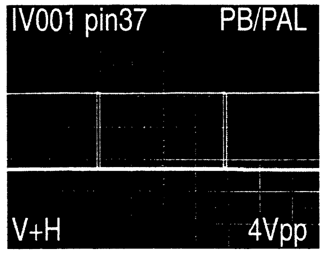

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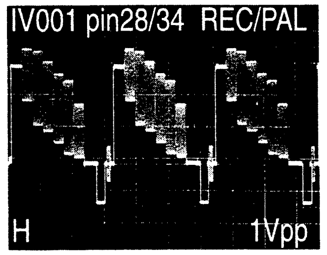

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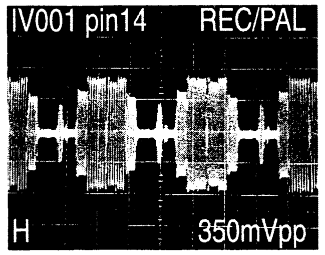

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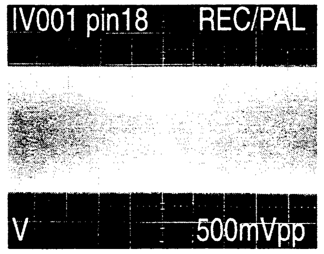
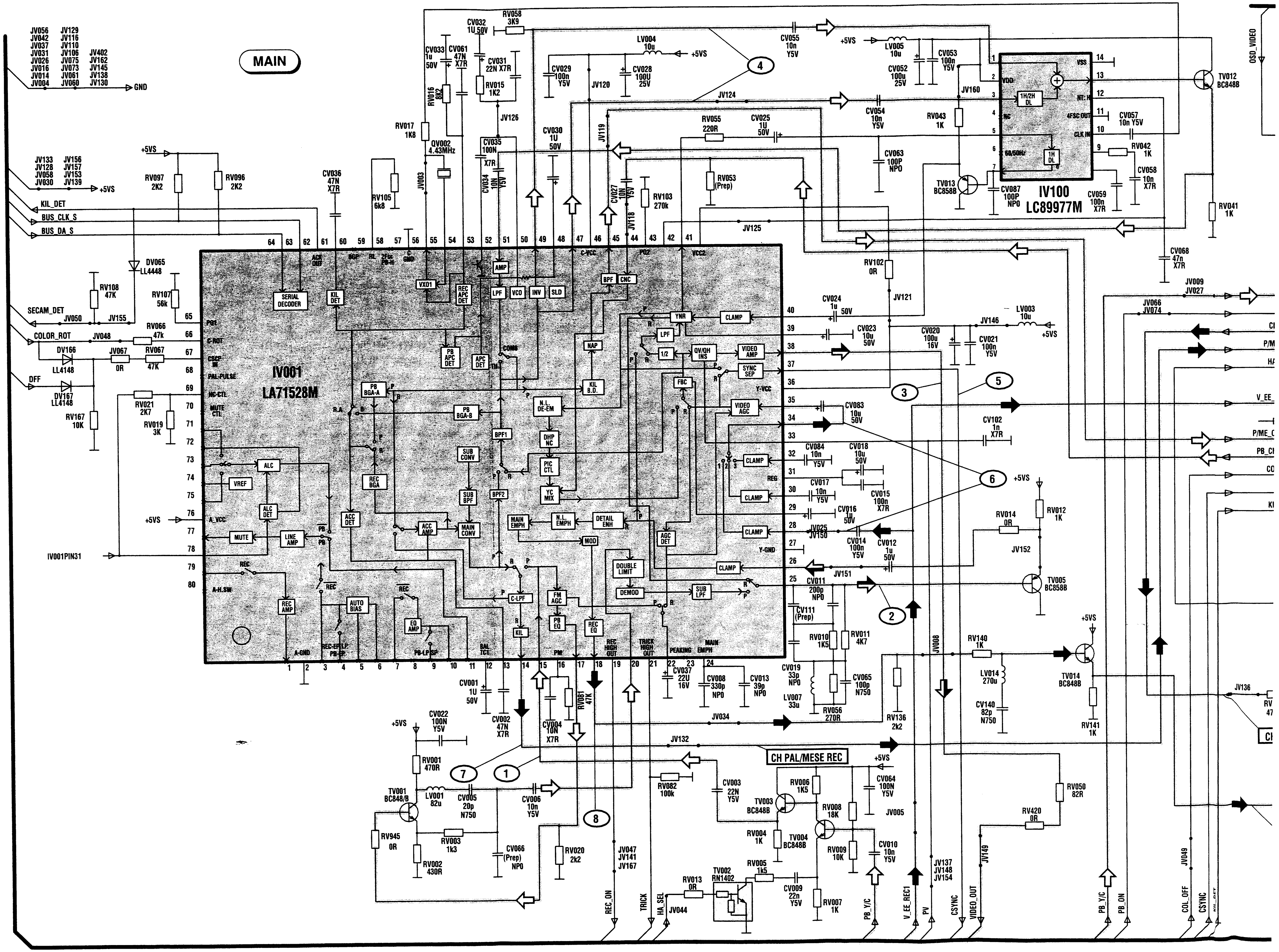


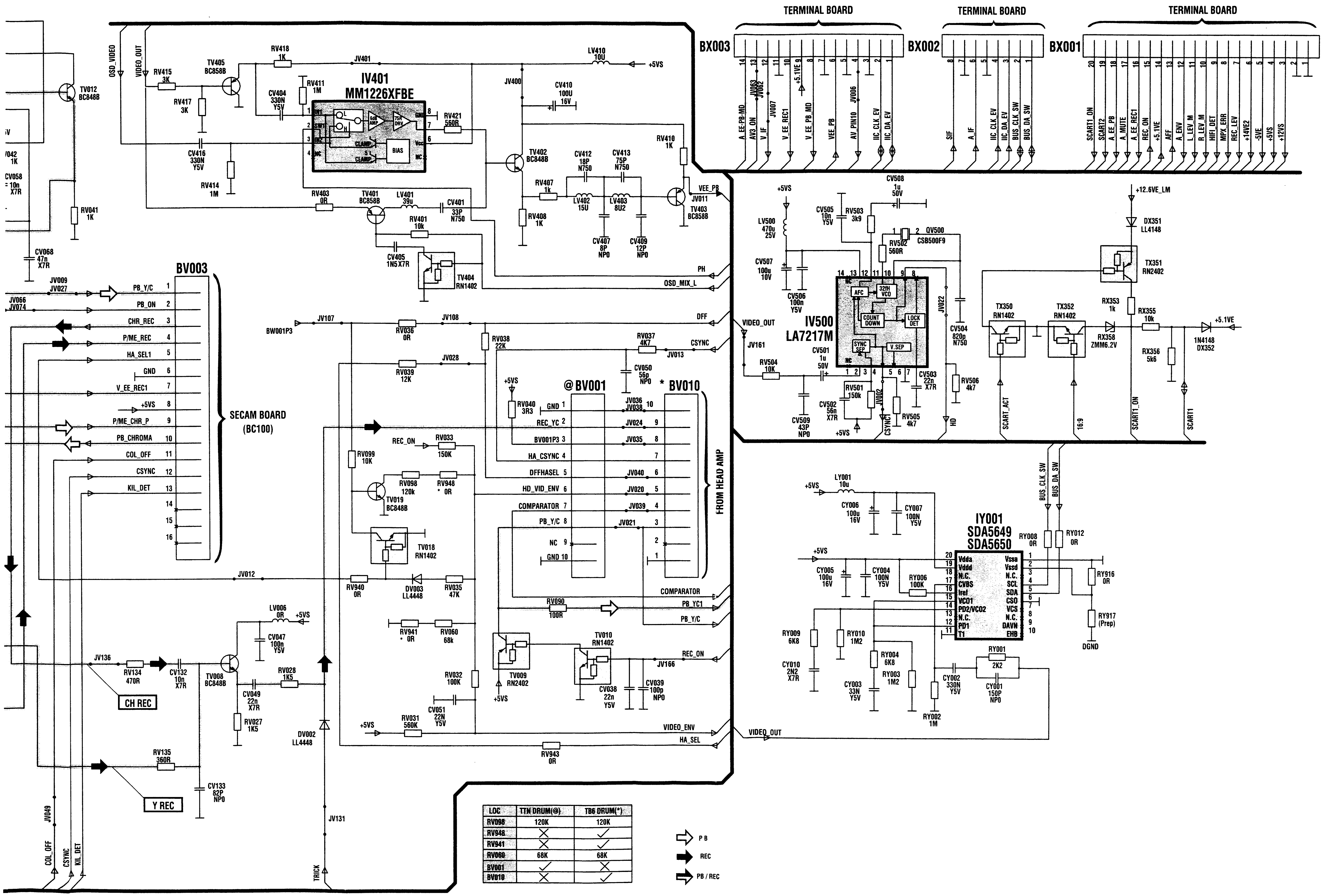
⑧

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


MAIN
IV001
LA71528M
IV100
LC89977M
GND
+5VS
KIL_DET
BUS_CLK_S
BUS_DA_S
SECAM_DET
COLOR_ROT
DFF
IV001PIN31
SERIAL DECODER
KIL DET
VXO1
REC APC DET
AMP
LPF
VCO
INV
SLD
BPF
CNC
YNR
CLAMP
NAP
KIL B.D.
N.L. DE-EM
DHP NC
PIC CTL
YC MIX
N.L. EMPH
DETAIL ENH
MAIN EMPH
MAIN CONV
SUB CONV
SUB BPF
BPF1
BPF2
PB APC DET
APC DET
PB BGA-A
PB BGA-B
REC BGA
ACC DET
ACC AMP
ALC
VREF
ALC DET
MUTE
LINE AMP
REC AMP
AUTO BIAS
EQ AMP
C-LPF
KIL
FM AGC
PB EQ
REC EQ
MOD
DOUBLE LIMIT
DEMOD
SUB LPF
AGC DET
VIDEO AMP
SYNC SEP
QV/QH INS
1/2
FBC
VIDEO AGC
1H/2H DL
1H DL
VDD
VSS
NT: H
4FSC OUT
CLK IN
QV002 4.43MHz
TV012 BC848B
TV013 BC858B
TV005 BC858B
TV014 BC848B
TV001 BC848/B
TV003 BC848B
TV004 BC848B
TV002 RN1402
CH PAL/MESE REC
OSD_VIDEO
REC_ON
TRICK
HA_SEL
PB_Y/C
V_EE_REC1
PV
CSYNC
VIDEO_OUT
PB_Y/C
PB_ON
COL_OFF
CSYNC
KIL_DET
V_EE
P/ME
PB_C
1
2
3
4
5
6
7
8

TO VIDEO

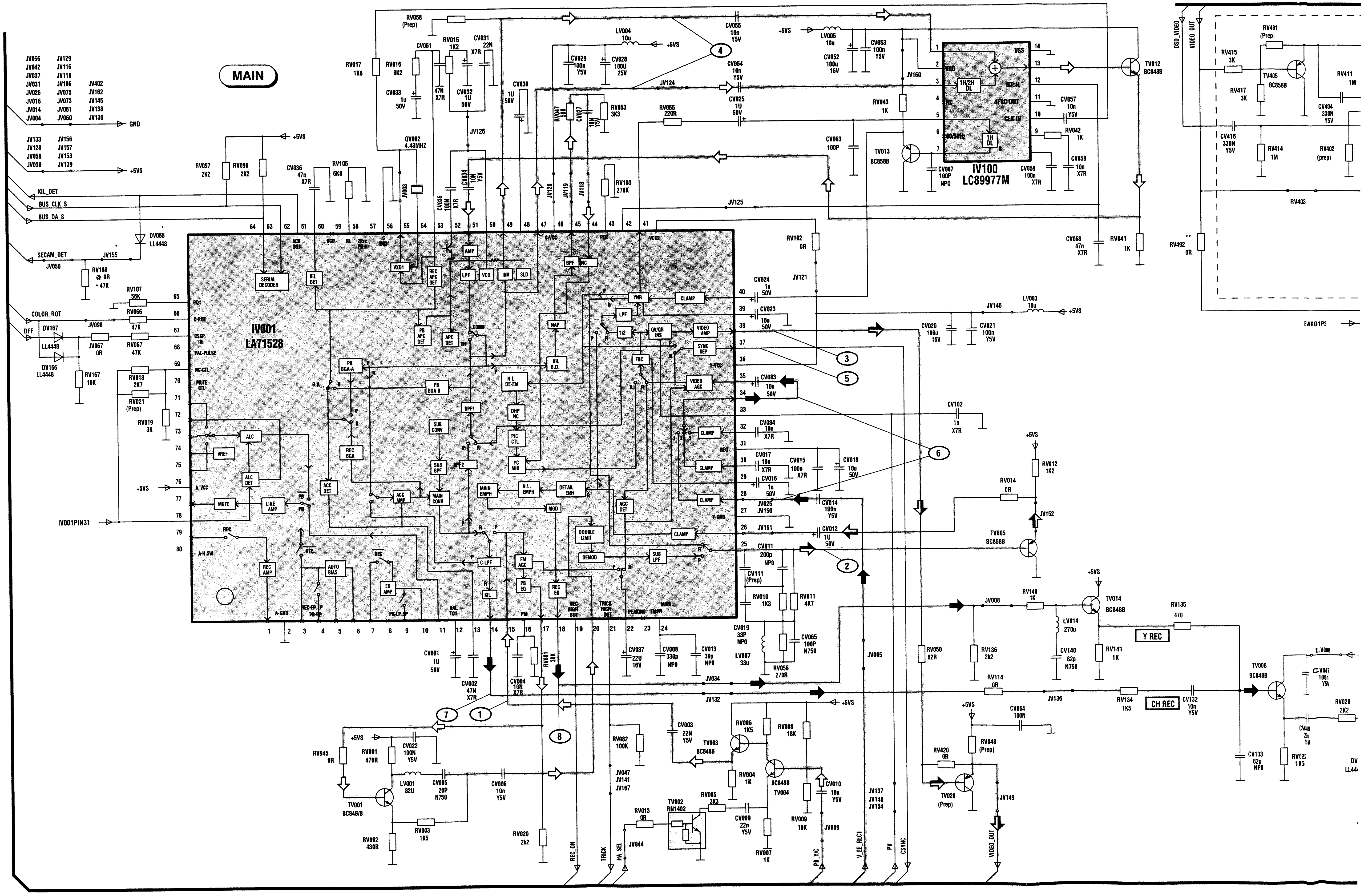


TERMINAL BOARD
BX003
BX002
BX001
A_EE_PB_MD
AV3_ON
V_IF
V_EE_REC1
V_EE_PB_MD
VEE_PB
AV_PIN10
IIC_CLK_EV
IIC_DA_EV
SIF
A_IF
BUS_CLK_SW
BUS_DA_SW
SCART1_ON
SCART2
A_MUTE
A_EE_PB
A_EE_REC1
REC_ON
+5.1VE
AFF
A_ENV
L_LEV_M
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE2
-5VE
+5VS
+12VS
IV401
MM1226XFBE
CLAMP
BIAS
TV405 BC858B
TV402 BC848B
TV401 BC858B
TV403 BC858B
TV404 RN1402
TV012 BC848B
OSD_VIDEO
VIDEO_OUT
VEE_PB
PH
OSD_MIX_L
DFF
CSYNC
BV003
PB_Y/C
PB_ON
CHR_REC
P/ME_REC
HA_SEL1
GND
V_EE_REC1
+5VS
P/ME_CHR_P
PB_CHROMA
COL_OFF
CSYNC
KIL_DET
SECAM BOARD
(BC100)
@BV001
* BV010
FROM HEAD AMP
REC_YC
BV001P3
HA_CSYNC
DFFHASEL
HD_VID_ENV
COMPARATOR
PB_Y/C
NC
GND
TV019 BC848B
TV018 RN1402
TV009 RN2402
TV010 RN1402
TV008 BC848B
DV003 LL4448
DV002 LL4448
CH REC
Y REC
REC_ON
PB_YC1
PB_Y/C
VIDEO_ENV
HA_SEL
JV131
TRICK
COL_OFF
CSYNC
KIL_DET
IV500
LA7217M
AFC
32fH VCO
COUNT DOWN
LOCK DET
SYNC SEP
V.SEP
QV500 CSB500F9
VIDEO_OUT
HD
CSYNC1
TX351 RN2402
TX350 RN1402
TX352 RN1402
DX351 LL4148
RX358 ZMM6.2V
1N4148 DX352
+12.6VE_LM
+5.1VE
SCART_ACT
16:9
SCART1_ON
SCART1
IY001
SDA5649
SDA5650
Vdda
Vddd
N.C.
CVBS
Iref
VCO1
PD2/VCO2
PD1
T1
Vssa
Vssd
SCL
SDA
CSO
VCS
DAVN
EHB
DGND
VIDEO_OUT
BUS_CLK_SW
BUS_DA_SW
P B
REC
PB / REC

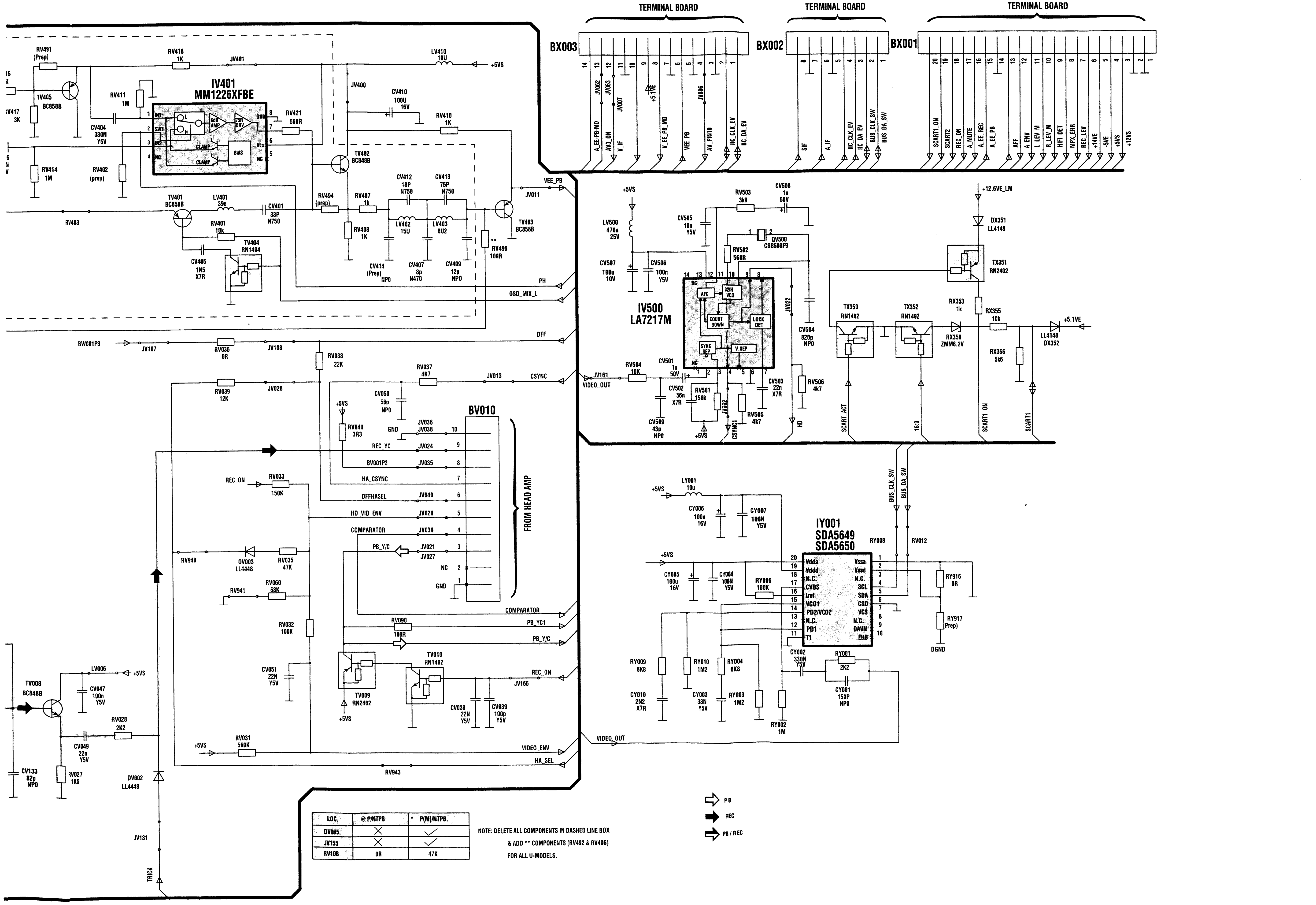
LOC	TTN DRUM(@)	TB6 DRUM(*)
RV098	120K	120K
RV948	✗	✓
RV941	✗	✓
RV060	68K	68K
BV001	✓	✗
BV010	✗	✓

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


MAIN
IV001
LA71528
IV100
LC89977M
GND
+5VS
KIL_DET
BUS_CLK_S
BUS_DA_S
SECAM_DET
COLOR_ROT
OFF
IV001PIN31
SERIAL DECODER
KIL DET
VXO1
REC APC DET
AMP
LPF
VCO
INV
SLD
BPF
NC
YNR
CLAMP
VIDEO AMP
SYNC SEP
VIDEO AGC
FBC
KIL B.D.
NAP
N.L. DE-EM
DHP NC
PIC CTL
YC MIX
N.L. EMPH
DETAIL ENH
MAIN EMPH
MOD
DOUBLE LIMIT
DEMOD
SUB LPF
AGC DET
FM AGC
PB EQ
REC EQ
C-LPF
KIL
ALC
VREF
ALC DET
MUTE
LINE AMP
ACC DET
ACC AMP
MAIN CONV
SUB CONV
SUB BPF
BPF1
BPF2
REC BGA
PB BGA-A
PB BGA-B
PB APC DET
APC DET
REC AMP
AUTO BIAS
EQ AMP
1H/2H DL
NT: H
4FSC OUT
CLK IN
1H DL
VSS
VDD
TV012 BC848B
TV013 BC858B
TV005 BC858B
TV014 BC848B
TV008 BC848B
TV003 BC848B
TV004 BC848B
TV001 BC848/B
TV002 RN1402
TV020 (Prep)
TV405 BC858B
Y REC
CH REC
QV002 4.43MHZ
REC_ON
TRICK
HA_SEL
PB_Y/C
V_EE_REC1
PV
CSYNC
VIDEO_OUT
OSD_VIDEO
VIDEO_OUT
8W0D1P3
1
2
3
4
5
6
7
8

VIDEO

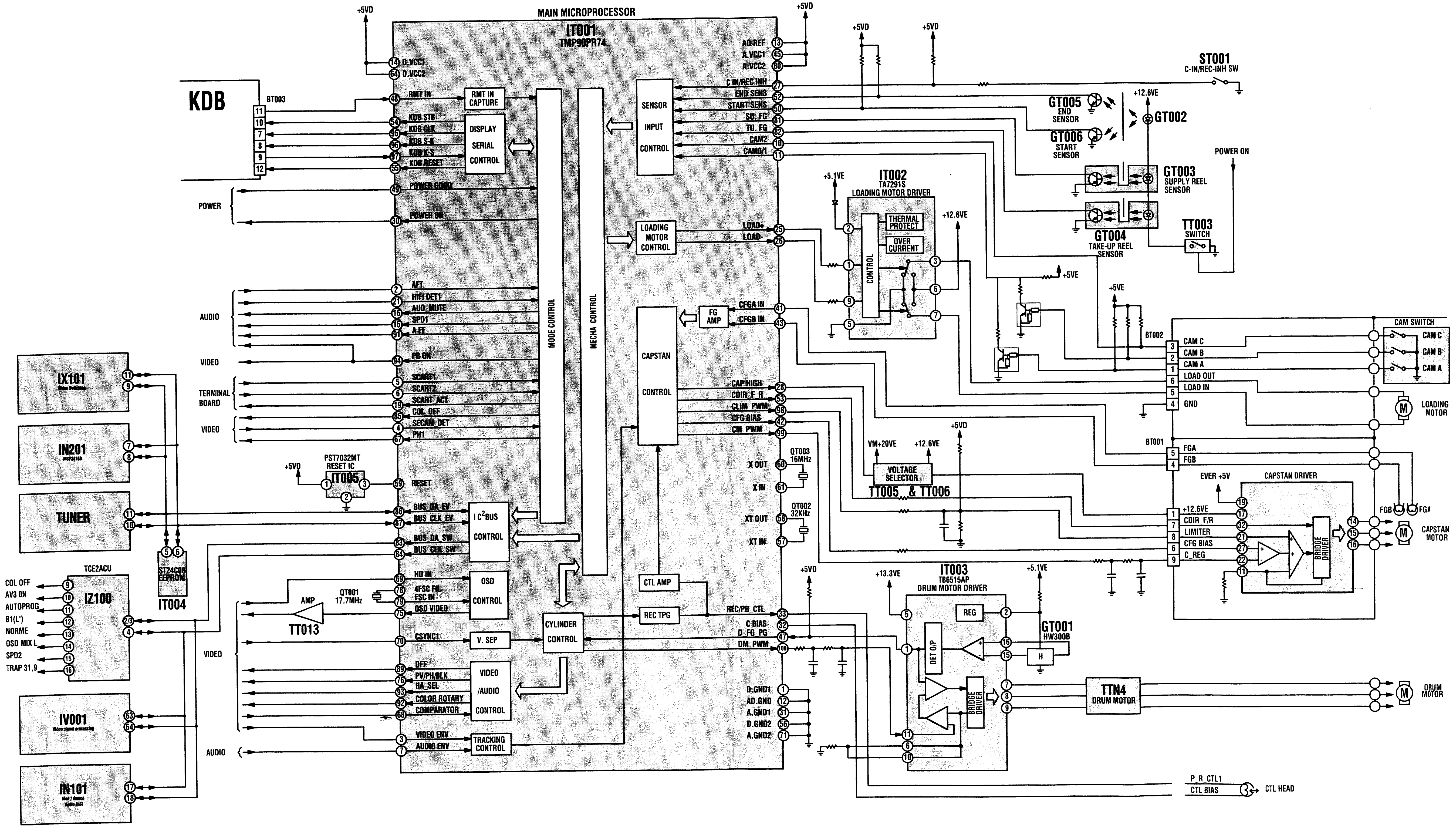

TERMINAL BOARD
TERMINAL BOARD
TERMINAL BOARD
BX003
BX002
BX001
A_EE-PB-MID
AV3_ON
V_IF
+5.1VE
V_EE_PB_MID
VEE_PB
AV_PIN10
IIC_CLK_EV
IIC_DA_EV
SIF
A_IF
IIC_CLK_EV
IIC_DA_EV
BUS_CLK_SW
BUS_DA_SW
SCART1_ON
SCART2
REC_ON
A_MUTE
A_EE_REC
A_EE_PB
AFF
A_ENV
L_LEV_M
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE
-5VE
+5VS
+12VS
IV401
MM1226XFBE
IV500
LA7217M
IY001
SDA5649
SDA5650
BV010
FROM HEAD AMP
RV491 (Prep)
RV418 1K
JV401
LV410 10U
+5VS
TV405 BC858B
RV411 1M
RV417 3K
CV404 330N Y5V
RV414 1M
RV402 (prep)
TV401 BC858B
LV401 39u
CV401 33P N750
RV403
RV401 10k
TV404 RN1404
CV405 1N5 X7R
JV400
CV410 100U 16V
RV421 560R
RV410 1K
TV402 BC848B
CV412 18P N750
CV413 75P N750
RV494 (prep)
RV407 1k
LV402 15U
LV403 8U2
RV408 1K
CV414 (Prep) NPO
CV407 8p N470
CV409 12p NPO
RV496 100R
TV403 BC858B
JV011
VEE_PB
PH
OSD_MIX_L
DFF
BW001P3
JV107
RV036 0R
JV108
RV038 22K
RV037 4K7
JV013
CSYNC
RV039 12K
JV028
CV050 56p NPO
RV040 3R3
GND
JV036
JV038
REC_YC
JV024
BV001P3
JV035
HA_CSYNC
REC_ON
RV033 150K
DFFHASEL
JV040
HD_VID_ENV
JV020
COMPARATOR
JV039
PB_Y/C
JV021
JV027
NC
GND
RV940
DV003 LL4448
RV035 47K
RV941
RV060 68K
RV032 100K
RV090 100R
COMPARATOR
PB_YC1
PB_Y/C
TV010 RN1402
TV009 RN2402
REC_ON
JV166
CV051 22N Y5V
CV038 22N Y5V
CV039 100p Y5V
RV031 560K
VIDEO_ENV
HA_SEL
RV943
LV006
TV008 BC848B
CV047 100n Y5V
RV028 2K2
CV049 22n Y5V
CV133 82p NPO
RV027 1K5
DV002 LL4448
JV131
TRICK
LV500 470u 25V
CV507 100u 10V
CV506 100n Y5V
CV505 10n Y5V
RV503 3k9
CV508 1u 50V
QV500 CSB500F9
RV502 560R
AFC
32fH VCO
COUNT DOWN
LOCK DET
SYNC SEP
V.SEP
JV022
CV504 820p NPO
RV504 10K
CV501 1u 50V
JV161
VIDEO_OUT
CV502 56n X7R
RV501 150k
CV509 43p NPO
JV062
CSYNC1
RV505 4k7
CV503 22n X7R
RV506 4k7
HD
+12.6VE_LM
DX351 LL4148
TX351 RN2402
TX350 RN1402
TX352 RN1402
RX353 1k
RX358 ZMM6.2V
RX355 10k
LL4148 DX352
+5.1VE
RX356 5k6
SCART_ACT
16:9
SCART1_ON
SCART1
BUS_CLK_SW
BUS_DA_SW
LY001 10u
CY006 100u 16V
CY007 100N Y5V
RY008
RY012
CY005 100u 16V
CY004 100N Y5V
RY006 100K
Vdda
Vddd
N.C.
CVBS
Iref
VCO1
PD2/VCO2
N.C.
PD1
T1
Vssa
Vssd
N.C.
SCL
SDA
CSO
VCS
N.C.
DAVN
EHB
RY916 0R
RY917 (Prep)
DGND
RY009 6K8
RY010 1M2
RY004 6K8
CY002 330N Y5V
RY001 2K2
CY001 150P NPO
CY010 2N2 X7R
CY003 33N Y5V
RY003 1M2
RY002 1M
VIDEO_OUT
PB
REC
PB / REC

LOC.	@ P/NTPB	* P(M)/NTPB.
DV065	✗	✓
JV155	✗	✓
RV108	0R	47K

NOTE: DELETE ALL COMPONENTS IN DASHED LINE BOX
& ADD ** COMPONENTS (RV492 & RV496)
FOR ALL U-MODELS.

MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANICA / SERVO - SERVOMECANISMO / GESTIÒN

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES

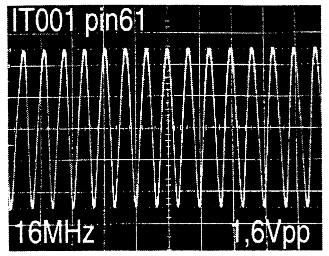

MAIN MICROPROCESSOR
IT001
TMP90PR74
+5VD
14 D.VCC1
64 D.VCC2
KDB
BT003
11
10
7
8
9
12
48 RMT IN
54 KDB STB
95 KDB CLK
96 KDB S-K
97 KDB K-S
55 KDB RESET
RMT IN CAPTURE
DISPLAY SERIAL CONTROL
POWER
49 POWER GOOD
30 POWER ON
AUDIO
2 AFT
21 HIFI DET1
16 AUD_MUTE
15 SPD1
91 A FF
VIDEO
94 PB ON
TERMINAL BOARD
5 SCART1
6 SCART2
19 SCART_ACT
85 COL_OFF
VIDEO
4 SECAM_DET
67 PH1
MODE CONTROL
MECHA CONTROL
IX101
Video Switching
11
9
IN201
MSP3416D
7
8
TUNER
11
10
5
6
ST24C08 EEPROM
IT004
PST7032MT
RESET IC
+5VD
IT005
1
2
3
59 RESET
86 BUS_DA_EV
87 BUS_CLK_EV
83 BUS_DA_SW
84 BUS_CLK_SW
I C²BUS CONTROL
TCE2ACU
IZ100
COL OFF 9
AV3 ON 10
AUTOPROG 11
B1(L') 12
NORME 13
OSD MIX L 14
SPD2 15
TRAP 31,9 16
2/3
4
69 HD IN
78 4FSC FIL
79 FSC IN
75 OSD VIDEO
OSD CONTROL
AMP
QT001
17.7MHz
TT013
VIDEO
70 CSYNC1
V. SEP
CYLINDER CONTROL
89 DFF
76 PV/PH/BLK
93 HA_SEL
92 COLOR ROTARY
68 COMPARATOR
VIDEO /AUDIO CONTROL
IV001
Video signal processing
63
64
AUDIO
3 VIDEO ENV
7 AUDIO ENV
TRACKING CONTROL
IN101
Mod / demod
Audio HiFi
17
18
+5VD
AD REF 13
A.VCC1 45
A.VCC2 80
C IN/REC INH 27
END SENS 52
START SENS 50
SU. FG 81
TU. FG 82
CAM2 10
CAM0/1 11
SENSOR INPUT CONTROL
LOADING MOTOR CONTROL
LOAD+ 25
LOAD- 26
FG AMP
CFGA IN 41
CFGB IN 43
CAPSTAN CONTROL
CAP HIGH 28
CDIR_F_R 53
CLIM_PWM 98
CFG BIAS 42
CM_PWM 99
QT003
16MHz
X OUT 60
X IN 61
QT002
32KHz
XT OUT 58
XT IN 57
CTL AMP
REC TPG
REC/PB_CTL 33
C BIAS 32
D_FG_PG 47
DM_PWM 100
D.GND1 1
AD.GND 12
A.GND1 31
D.GND2 56
A.GND2 71
+5VD
+5VD
+5VD
ST001
C-IN/REC-INH SW
GT005
END SENSOR
GT006
START SENSOR
+12.6VE
GT002
POWER ON
GT003
SUPPLY REEL SENSOR
GT004
TAKE-UP REEL SENSOR
TT003
SWITCH
+5.1VE
IT002
TA7291S
LOADING MOTOR DRIVER
THERMAL PROTECT
OVER CURRENT
CONTROL
1
2
3
5
6
7
9
+12.6VE
+5VE
+5VE
BT002
3 CAM C
2 CAM B
1 CAM A
6 LOAD OUT
5 LOAD IN
4 GND
CAM SWITCH
CAM C
CAM B
CAM A
LOADING MOTOR
BT001
5 FGA
4 FGB
VM+20VE
+12.6VE
+5VD
VOLTAGE SELECTOR
TT005 & TT006
EVER +5V
CAPSTAN DRIVER
19
1 +12.6VE 17
7 CDIR_F/R 32
8 LIMITER 21
6 CFG BIAS 27
9 C_REG 22
11
BRIDGE DRIVER
14
15
16
FGB
FGA
CAPSTAN MOTOR
+5VD
+13.3VE
IT003
TB6515AP
DRUM MOTOR DRIVER
+5.1VE
REG
DET O/P
BRIDGE DRIVER
1
2
5
6
7
8
9
10
11
15
16
GT001
HW300B
H
TTN4
DRUM MOTOR
DRUM MOTOR
P_R_CTL1
CTL BIAS
CTL HEAD

MEASUREMENTS MECHA DECK CONTROL / SERVO CONTROL - MESURES GESTION / ASSERVISSEMENTS - MESSUNGEN MECHANIKSTEUERUNG / SERVO - MISURE CONTROLLO MECCANISMO - MEDIDAS SERVOMECANISMO / GESTION

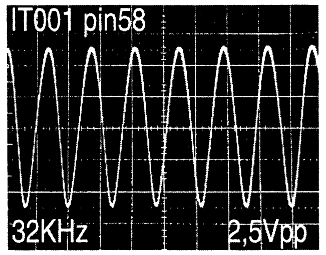
SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
IT001	1	0	0	0
	2	4,4	4,4	4,4
	3	1	2,8	2,8
	4	3,6	3,6	3,6
	5	0	4,2	0
	6	0	0	0
	7	0	0,3	0
	8	3,7	3,7	3,7
	9	3,7	3,4	3,7
	10	5,2	0	0
	11	2,6	2	2
	12	0	0	0
	13	5	5	5
	14	5	5	5
	15	0	0	0
	16	0	0	0
	17	0	0	0
	18	0	0	5
	19	0	5	0
	20	0	5	0
	21	0	4,3	0
	22	0	0	0
	23	0	0	0
	24	5,2	5,2	5,2
	25	5	5	5
	26	5	5	5
	27	5	0	5,2
	28	0	0	0
	29	5	5	5
	30	4,8	4,8	4,8
	31	0	0	0
	32	2,6	2,6	2,6
	33	2,6	2,6	3
	34	2,6	2,6	2,6
	35	2,6	2,6	2,6
	36	2,5	2,5	2,5
	37	2,6	2,6	2,6
	38	2,6	3,8	2,6
	39	2,4	1,3	2,4
	40	2,6	2,6	2,6
	41	2,6	2,6	2,6
	42	2,6	2,6	2,6
	43	2,6	2,6	2,6
	44	2,6	2,6	2,6
	45	5,2	5,2	5,2
	46	5	3,5	5
	47	0	1,3	1,3
	48	5	5	5
	49	5,3	5,3	5,3
	50	5	5	5
	51	1,7	1,7	1,7
	52	5,2	5,2	5,2
	53	5	0	0
	54	4,2	4,2	4,2
K-RESET	55	5	5	5
	56	0	0	0
	57	2	2	2
	58	2,6	2,6	2,6
RESET	59	5	5	5
	60	2,3	2,3	2,3
	61	2	2	2
	62	5	5	5
	63	0	0	0,3
	64	5	5	5

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
	65	0	0	0
	66	0	0	0
	67	0,1	0,1	0,1
	68	4,6	0	1,8
	69	3,7	3,7	3,7
	70	3,7	3,7	3,7
	71	0	0	0
	72	0	0	0
	73	0	0	0
	74	0	0	0
	75	1,2	1,2	1,2
	76	0,2	0,2	0,2
	77	NC	NC	NC
	78	2,3	2,3	2,3
	79	2	2	2
	80	5	5	5
	81	5,2	-	-
	82	1,9	-	-
DATA SW	83	-	-	-
CLOCK SW	84	-	-	-
	85	0	0	0
DATA	86	-	-	-
CLOCK	87	-	-	-
	88	3,7	3,7	3,7
	89	0	2,5	2,5
	90	0	0	5
	91	0	2,4	2,6
	92	0	2,4	2,6
	93	0	0	0
	94	0	5	0
	95	5	5	5
	96	0,2	0,2	0,2
	97	5	5	5
	98	2	2	2
PWM	99	2,7	2,7	2,7
PWM	100	2,7	2,7	2,7
IT002	1	4,6	4,6	4,6
	2	4,9	4,9	4,9
	3	0,5	0,5	0,5
	4	-	-	-
	5	0	0	0
	6	12,4	2,4	12,4
	7	0,5	0,5	0,5
	8	12,4	12,4	12,4
	9	4,6	4,6	4,6
IT003	1	1,3	1,3	1,3
	2	4,9	4,9	4,9
	3	0,5	0,5	0,5
	4	-	-	-
	5	0	0	0
	6	12,4	12,4	12,4
	7	0,5	0,5	0,5
	8	12,4	12,4	12,4
	9	4,6	4,6	4,6
IT004	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	4,5	4,5	4,5
	6	4,7	4,7	4,7

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
	7	0	0	0
	8	4,9	4,9	4,9
IT005	1	4,8	4,8	4,8
	2	0	0	0
	3	4,8	4,8	4,8
TT001	B	0	4,8	4,8
	E	0	0	0
	C	5,3	0	0
TT002	B	0	4,8	4,8
	E	0	0	0
	C	5,3	0	0
TT003	B	0,7	0,7	0,7
	E	0	0	0
	C	0,1	0,1	0,1
TT004	B	5	5	5
	E	2,5	2,5	2,5
	C	0	0	0
TT005	B	18,2	18,2	18,2
	E	18,7	18,7	18,7
	C	14	13	13
TT006	B	0	0	0
	E	0	0	0
	C	18,2	18,2	18,2
TT013	B	1,2	1,2	1,2
	E	1,9	1,9	1,9



①



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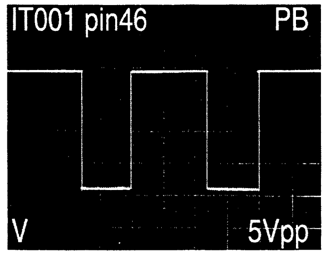
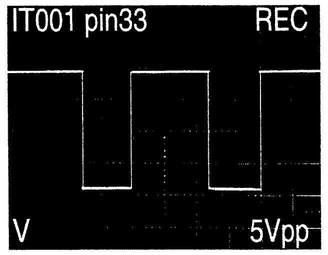
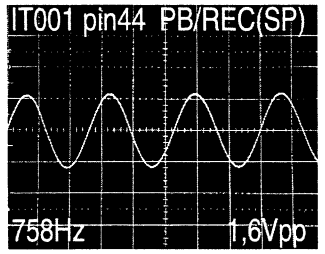


③



④



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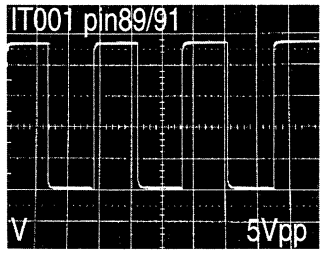

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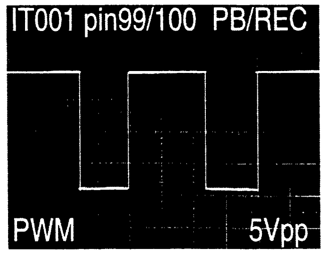

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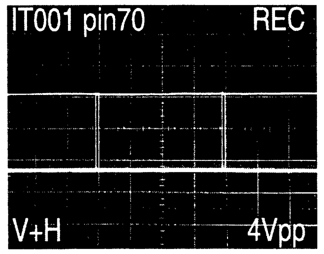

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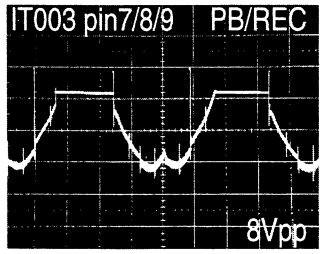
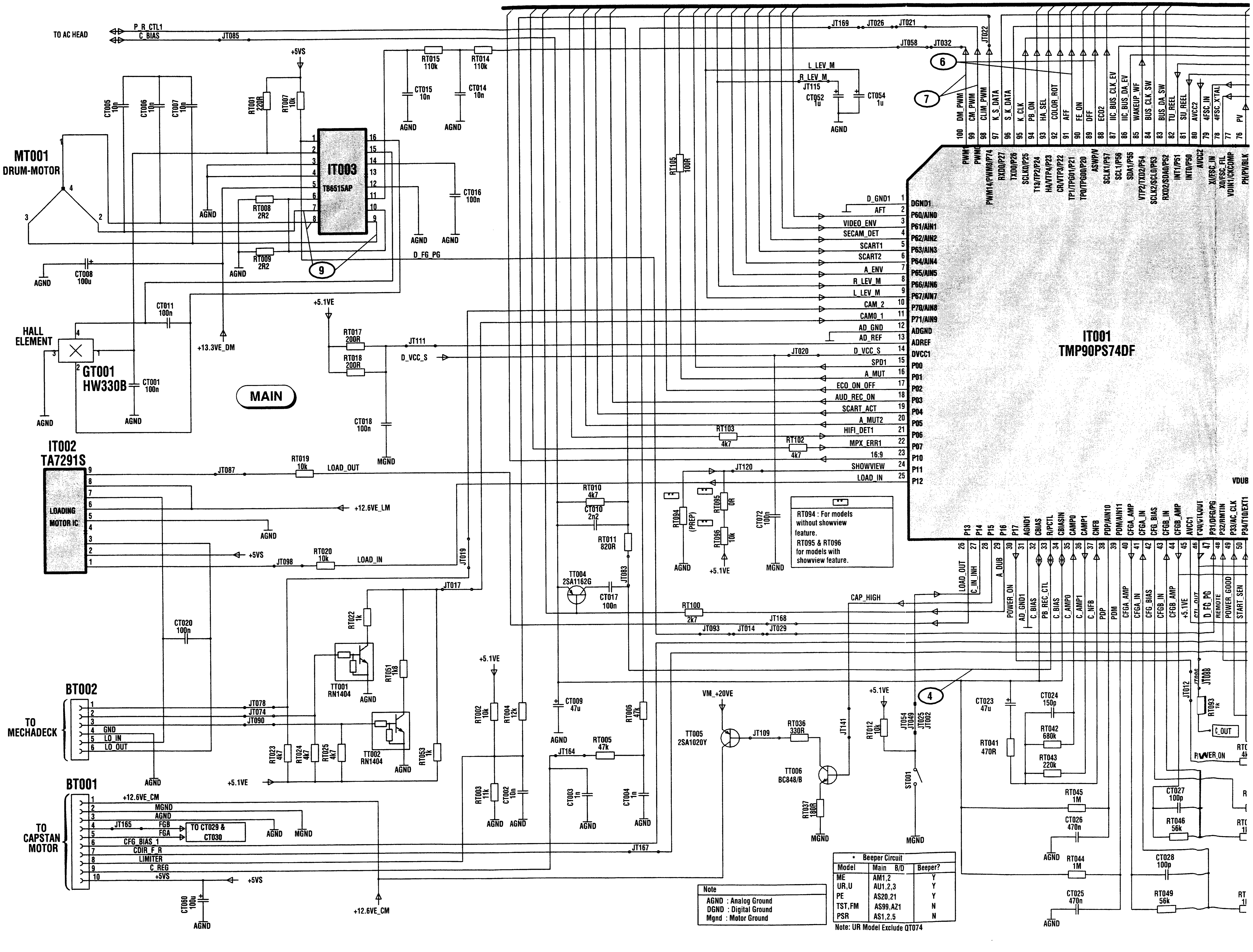


⑨

MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANICA / SERVO - SERVOM

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TO AC HEAD
P_R_CTL1
C_BIAS
JT085
+5VS
MT001
DRUM-MOTOR
CT005 10n
CT006 10n
CT007 10n
RT001 220R
RT007 10k
IT003
TB6515AP
RT015 110k
RT014 110k
CT015 10n
CT014 10n
CT016 100n
AGND
RT008 2R2
RT009 2R2
CT008 100u
D_FG_PG
HALL ELEMENT
GT001
HW330B
CT001 100n
CT011 100n
+13.3VE_DM
MAIN
+5.1VE
RT017 200R
RT018 200R
JT111
D_VCC_S
CT018 100n
MGND
IT002
TA7291S
LOADING MOTOR IC
RT019 10k
LOAD_OUT
JT087
+12.6VE_LM
+5VS
RT020 10k
LOAD_IN
JT098
CT020 100n
JT019
JT017
RT022 1k
TT001 RN1404
RT051 1k8
BT002
TO MECHADECK
GND
LO_IN
LO_OUT
JT078
JT074
JT090
RT023 4k7
RT024 4k7
RT025 4k7
TT002 RN1404
RT053 1k
BT001
TO CAPSTAN MOTOR
+12.6VE_CM
MGND
AGND
JT165
FGB
FGA
TO CT029 & CT030
CFG_BIAS_1
CDIR_F_R
LIMITER
C_REG
+5VS
CT060 100u
+12.6VE_CM
RT002 10k
RT004 12k
RT003 11k
CT002 10n
CT009 47u
RT005 47k
JT164
CT003 1n
RT006 47k
CT004 1n
JT167
VM_+20VE
TT005 2SA1020Y
JT109
RT036 330R
TT006 BC848/B
RT037 180R
JT141
RT012 10k
JT054
JT049
JT025
JT002
ST001
RT105 100R
RT103 4k7
RT102 4k7
JT120
RT010 4k7
CT010 2n2
RT011 820R
TT004 2SA1162G
JT083
CT017 100n
RT094 (PREP)
RT095 0R
RT096 10k
CT072 100n
RT100 2k7
JT093
JT014
JT029
JT168
CAP_HIGH
L_LEV_M
R_LEV_M
JT115
CT052 1u
CT054 1u
JT169
JT026
JT021
JT058
JT032
JT022
IT001
TMP90PS74DF
D_GND1
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
A_ENV
R_LEV_M
L_LEV_M
CAM_2
CAMO_1
AD_GND
AD_REF
D_VCC_S
SPD1
A_MUT
ECO_ON_OFF
AUD_REC_ON
SCART_ACT
A_MUT2
HIFI_DET1
MPX_ERR1
16:9
SHOWVIEW
LOAD_IN
JT020
DGND1
P60/AIN0
P61/AIN1
P62/AIN2
P63/AIN3
P64/AIN4
P65/AIN5
P66/AIN6
P67/AIN7
P70/AIN8
P71/AIN9
ADGND
ADREF
DVCC1
P00
P01
P02
P03
P04
P05
P06
P07
P10
P11
P12
DM_PWM
CM_PWM
CLIM_PWM
K_S_DATA
K_CLK
PB_ON
HA_SEL
COLOR_ROT
AFF
FE_ON
DFF
ECO2
IIC_BUS_CLK_EV
IIC_BUS_DA_EV
WAKEUP_WF
BUS_CLK_SW
BUS_DA_SW
TU_REEL
SU_REEL
AVCC2
4FSC_IN
4FSC_XTAL
PV
LOAD_OUT
C_IN_INH
A_DUB
POWER_ON
AD_GND1
C_BIAS
PB_REC_CTL
C_BIAS
C_AMP0
C_AMP1
C_NFB
PDP
PDM
CFGA_AMP
CFGA_IN
CFG_BIAS
CFGB_IN
CFGB_AMP
+5.1VE
D_FG_PG
REMOTE
POWER_GOOD
START_SEN
VDUB
CT023 47u
CT024 150p
RT041 470R
RT042 680k
RT043 220k
RT045 1M
CT026 470n
RT044 1M
CT025 470n
CT027 100p
RT046 56k
CT028 100p
RT049 56k
JT012
JT086
JT088
RT093 1k
C_OUT
POWER_ON
6
7
9
4

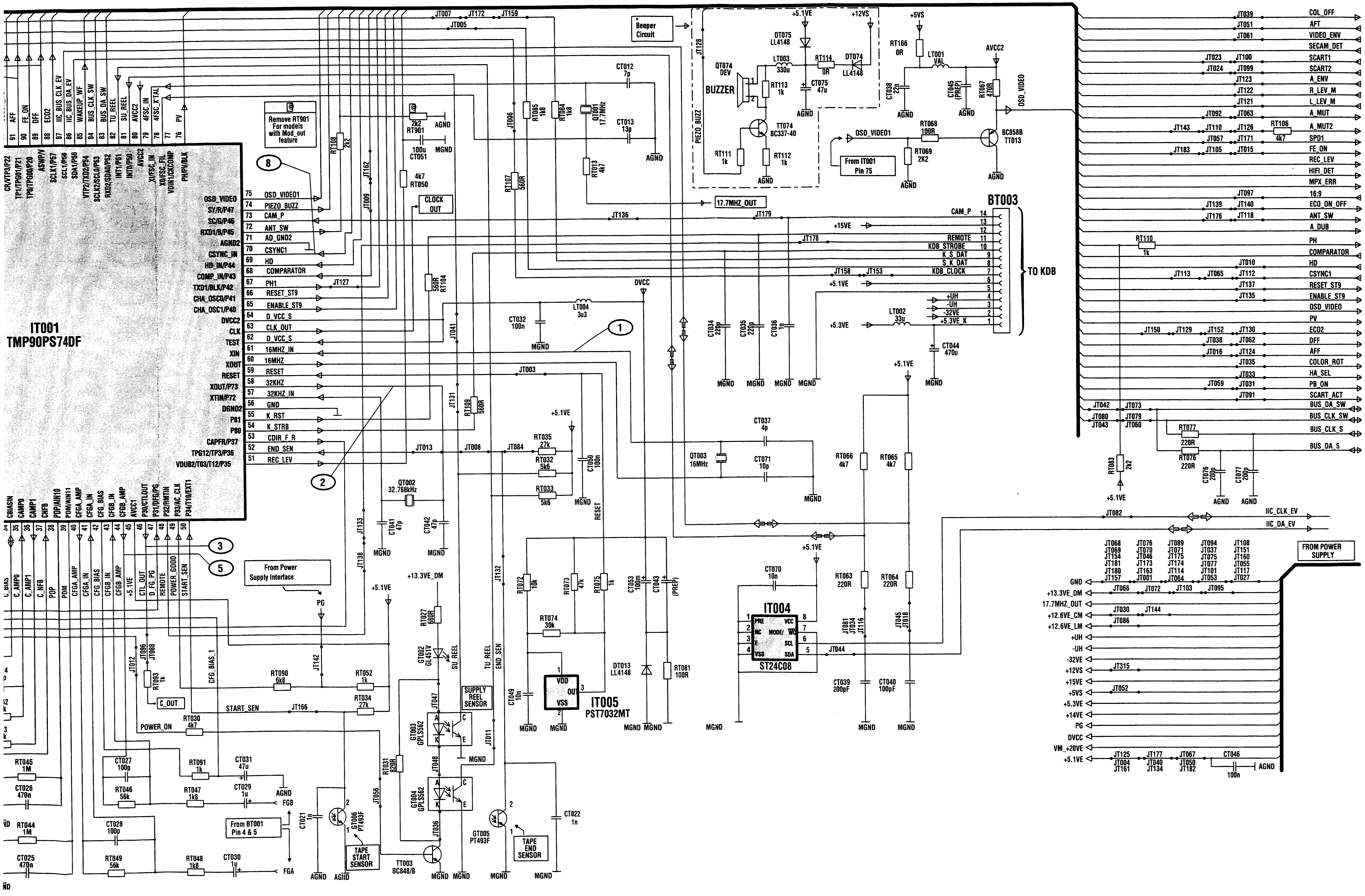
RT094 : For models without showview feature.
RT095 & RT096 for models with showview feature.

* Beeper Circuit		
Model	Main B/D	Beeper?
ME	AM1,2	Y
UR,U	AU1,2,3	Y
PE	AS20,21	Y
TST,FM	AS99,AZ1	N
PSR	AS1,2,5	N

Note: UR Model Exclude QT074

Note
AGND : Analog Ground
DGND : Digital Ground
Mgnd : Motor Ground

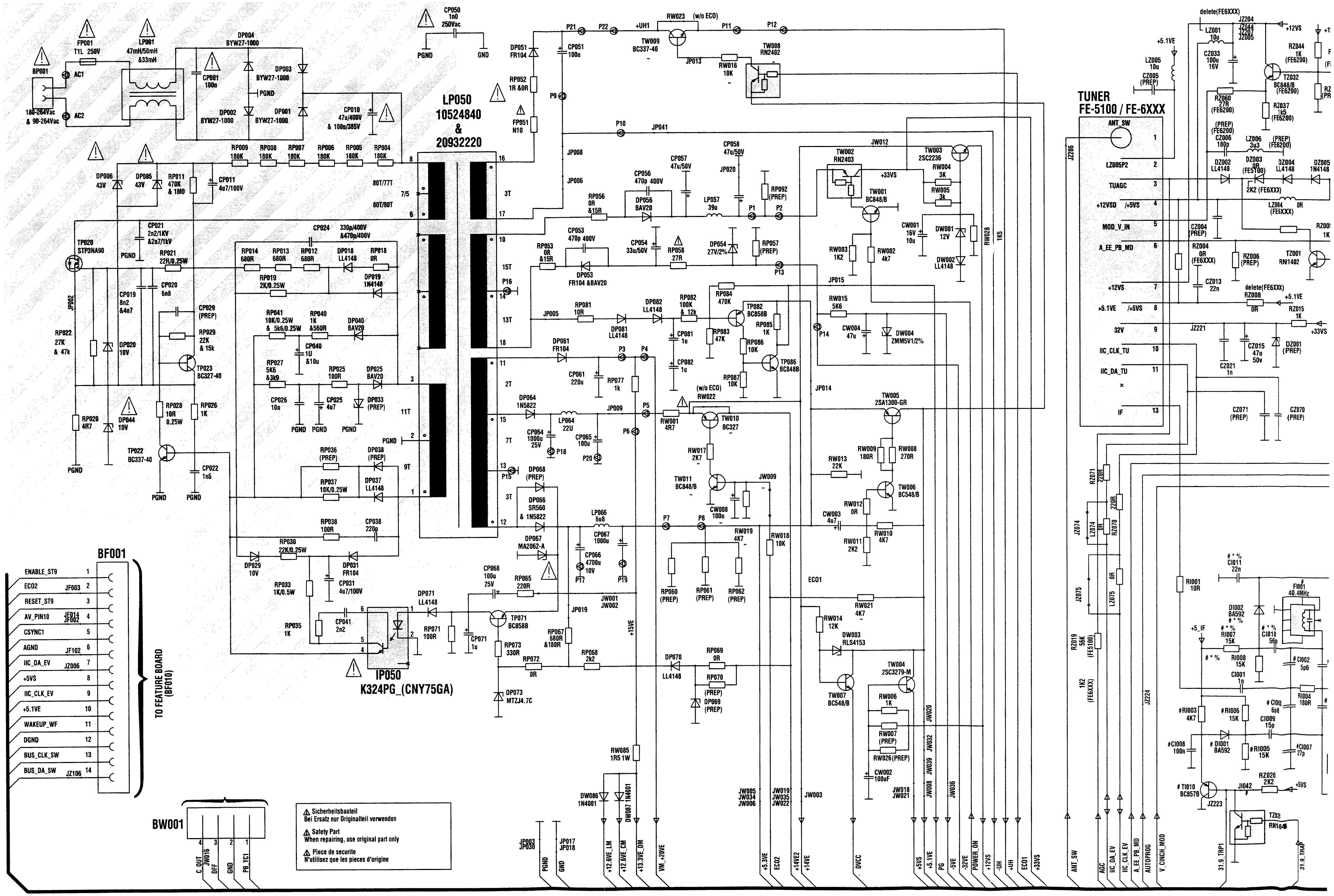
CA / SERVO - SERVOMECANISMO / GESTIÒN



IT001
TMP90PS74DF
IT004
ST24C08
IT005
PST7032MT
BT003
TO KDB
BUZZER
Beeper Circuit
Remove RT901 For models with Mod_out feature
CLOCK OUT
From IT001 Pin 75
17.7MHZ_OUT
From Power Supply Interface
FROM POWER SUPPLY
From BT001 Pin 4 & 5
SUPPLY REEL SENSOR
TAPE START SENSOR
TAPE END SENSOR
C_OUT
OSD_VIDEO1
PIEZO_BUZZ
CAM_P
ANT_SW
AD_GND2
CSYNC1
HD
COMPARATOR
PH1
RESET_ST9
ENABLE_ST9
D_VCC_S
CLK_OUT
16MHZ_IN
16MHZ
RESET
32KHZ
32KHZ_IN
GND
K_RST
K_STRB
CDIR_F_R
END_SEN
REC_LEV
START_SEN
POWER_ON
CAM_P
+15VE
REMOTE
KDB_STROBE
K_S_DAT
S_K_DAT
KDB_CLOCK
+5.1VE
+UH
-UH
-32VE
+5.3VE_K
+5.3VE
COL_OFF
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
A_ENV
R_LEV_M
L_LEV_M
A_MUT
A_MUT2
SPD1
FE_ON
REC_LEV
HIFI_DET
MPX_ERR
16:9
ECO_ON_OFF
ANT_SW
A_DUB
PH
COMPARATOR
HD
CSYNC1
RESET_ST9
ENABLE_ST9
OSD_VIDEO
PV
ECO2
DFF
AFF
COLOR_ROT
HA_SEL
PB_ON
SCART_ACT
BUS_DA_SW
BUS_CLK_SW
BUS_CLK_S
BUS_DA_S
IIC_CLK_EV
IIC_DA_EV
GND
+13.3VE_DM
17.7MHZ_OUT
+12.6VE_CM
+12.6VE_LM
+UH
-UH
-32VE
+12VS
+15VE
+5VS
+5.3VE
+14VE
PG
DVCC
VM_+20VE
+5.1VE
QT001 17.7MHz
QT002 32.768kHz
QT003 16MHz
GT002 GL451V
GT003 GPLS562
GT004 GPLS562
GT005 PT493F
GT006 PT493F
TT003 BC848/B
TT013 BC858B
TT074 BC337-40
QT074 DEV
DT013 LL4148
DT074 LL4148
DT075 LL4148
AGND
MGND

POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - ALIMENTAZONE / TUNER / IF - INT

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

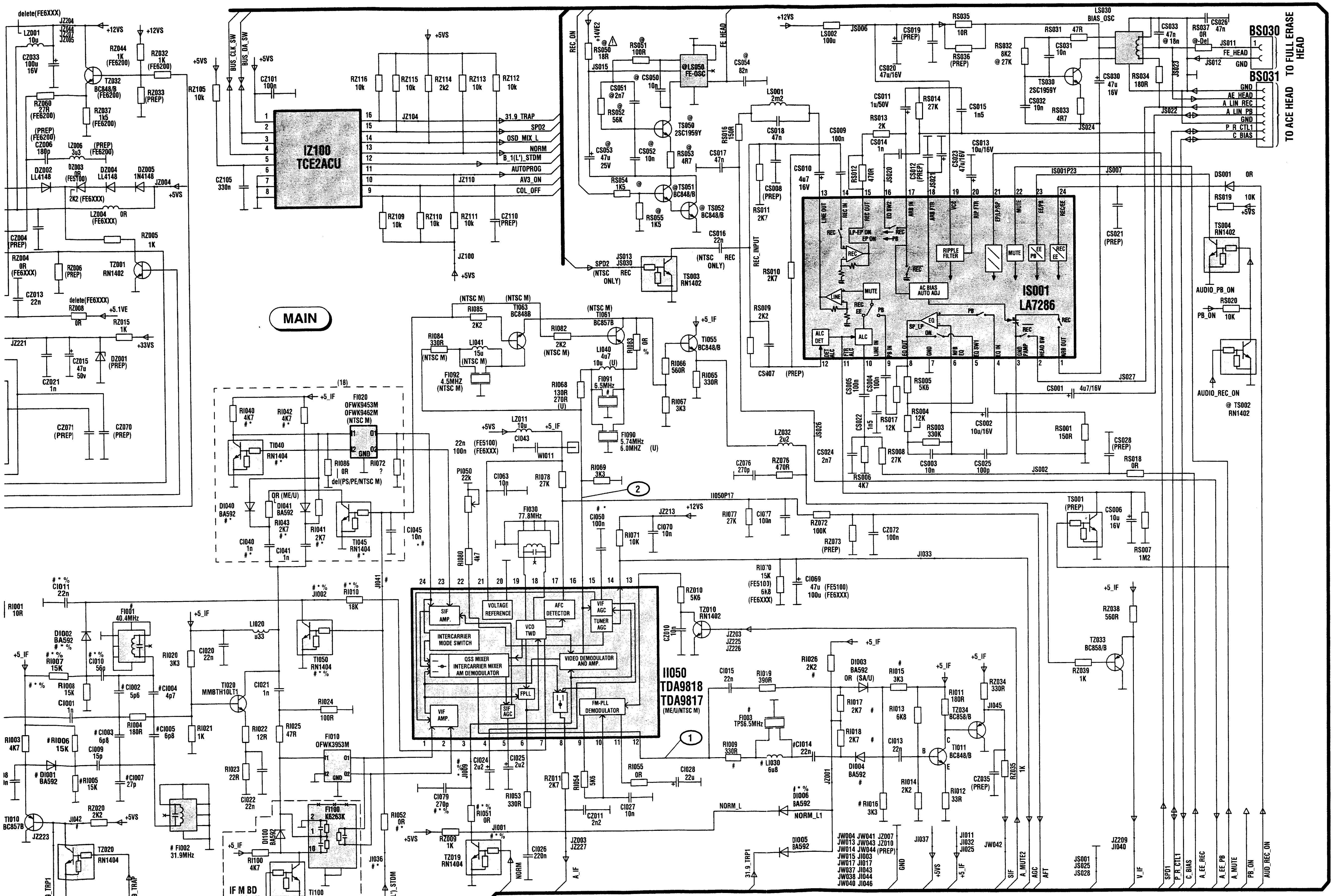

BP001
180-264Vac & 90-264Vac
FP001 T1L 250V
AC1
AC2
LP001 47mH/50mH &33mH
CP001 100n
DP004 BYW27-1000
DP003 BYW27-1000
DP002 BYW27-1000
DP001 BYW27-1000
PGND
CP010 47u/400V & 100u/385V
CP050 1n0 250Vac
PGND
GND
LP050
10524840
&
20932220
RP009 180K
RP008 180K
RP007 180K
RP006 180K
RP005 180K
RP004 180K
DP006 43V
DP005 43V
RP011 470K & 1M0
CP011 4u7/100V
80T/77T
7/5
80T/80T
CP021 2n2/1KV &2n7/1kV
TP020 STP3NA90
PGND
RP021 22R/0.25W
CP024 330p/400V &470p/400V
RP014 680R
RP013 680R
RP012 680R
DP018 LL4148
RP018 0R
RP019 2K/0.25W
DP019 1N4148
CP019 8n2 &4n7
CP020 6n8
JP002
RP022 27K & 47k
DP020 10V
CP029 (PREP)
RP029 22K & 15k
TP023 BC327-40
RP041 10K/0.25W & 5k6/0.25W
RP040 1K &560R
DP040 BAV20
CP040 1U &10u
RP027 5K6 &3k9
RP025 100R
DP025 BAV20
CP026 10n
CP025 4u7
DP033 (PREP)
11T
RP020 4R7
DP044 10V
RP028 10R 0.25W
RP026 1K
TP022 BC337-40
CP022 1n5
PGND
RP036 (PREP)
DP038 (PREP)
9T
RP037 10K/0.25W
DP037 LL4148
RP038 100R
CP038 220p
RP030 22K/0.25W
DP029 10V
DP031 FR104
RP033 1K/0.5W
CP031 4u7/100V
RP035 1K
CP041 2n2
IP050
K324PG_(CNY75GA)
DP071 LL4148
CP068 100u 25V
RP065 220R
TP071 BC858B
RP071 100R
CP071 1u
RP073 330R
RP072 0R
DP073 MTZJ4.7C
RP067 680R &180R
RP068 2k2
JP019
JW001
JW002
16
3T
17
10
15T
P16
14
13T
18
11
2T
15
7T
13
P15
3T
12
DP051 FR104
CP051 100u
RP052 1R &0R
P9
FP051 N10
P21
P22
+UH1
RW023 (w/o ECO)
P11
P12
TW009 BC337-40
JP013
RW016 10K
TW008 RN2402
P10
JP041
JP008
JP006
CP056 470p 400V
CP057 47u/50V
CP058 47u/50V
JP020
RP056 0R &15R
DP056 BAV20
LP057 39u
P1
P2
RP092 (PREP)
CP053 470p 400V
RP053 0R &15R
DP053 FR104 &BAV20
CP054 33u/50V
RP058 27R
DP054 27V/2%
RP057 (PREP)
P13
JP005
RP081 10R
DP082 LL4148
DP081 LL4148
RP082 100K & 12k
CP081 1u
RP084 470K
TP082 BC858B
RP085 1K
RP083 47K
RP086 10K
TP086 BC848B
RP087 10K
DP061 FR104
P3
P4
CP082 1u
CP061 220u
RP077 1k
DP064 1N5822
LP064 22U
JP009
P5
(w/o ECO) RW022
RW001 4R7
TW010 BC327
CP064 1000u 25V
P18
CP065 100u
P20
P6
RW017 2K7
TW011 BC848/B
JW009
CW008 100u
DP068 (PREP)
DP066 SR560 & 1N5822
LP066 6u8
P7
P8
RW019 4K7
RW018 10K
CP067 1000u
CP066 4700u 10V
DP067 MA2062-A
P17
P19
RP060 (PREP)
RP061 (PREP)
RP062 (PREP)
DP070 LL4148
RP069 0R
RP070 (PREP)
DP069 (PREP)
RW085 1R5 1W
DW086 1N4001
DW087 1N4001
+15VE
JW012
TW002 RN2403
+33VS
TW003 2SC2236
RW004 3K
RW005 3k
TW001 BC848/B
CW001 16V 10u
DW001 12V
DW002 LL4148
JW028
1K5
RW003 1K2
RW002 4k7
JP015
RW015 5K6
P14
CW004 47u
DW004 ZMM5V1/2%
JP014
TW005 2SA1300-GR
RW009 180R
RW008 270R
RW013 22K
TW006 BC548/B
RW012 0R
CW003 4u7
RW010 4K7
RW011 2K2
ECO1
RW021 4K7
RW014 12K
DW003 RLS4153
TW004 2SC3279-M
TW007 BC548/B
RW006 1K
RW007 (PREP)
RW026(PREP)
CW002 100uF
JW018 JW021
JW020
JW032
JW008 JW039 JW036
JW005 JW034 JW006
JW019 JW035 JW022
JW003
BF001
ENABLE_ST9 1
ECO2 JF003 2
RESET_ST9 3
AV_PIN10 JF014 JF002 4
CSYNC1 5
AGND JF102 6
IIC_DA_EV JZ006 7
+5VS 8
IIC_CLK_EV 9
+5.1VE 10
WAKEUP_WF 11
DGND 12
BUS_CLK_SW 13
BUS_DA_SW JZ106 14
TO FEATURE BOARD (BF010)
BW001
4 3 2 1
C_OUT
JW016
DFF
GND
PB_YC1
JP003 JP030
JP017 JP018
PGND
GND
+12.6VE_LM
+12.6VE_CM
+13.3VE_DM
VM_+20VE
+5.3VE
ECO2
+14VE2
+14VE
DVCC
+5VS
+5.1VE
PG
-5VE
-32VE
POWER_ON
+12VS
-UH
+UH
ECO1
+33VS
ANT_SW
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_CINCH_MOD
31.9_TRP1
31.9_TRAP
TUNER
FE-5100 / FE-6XXX
ANT_SW 1
LZ005P2 2
TUAGC 3
+12VSD /+5VS 4
MOD_V_IN 5
A_EE_PB_MD 6
+12VS 7
+5.1VE /+5VS 8
32V 9
IIC_CLK_TU 10
IIC_DA_TU 11
×
IF 13
JZ206
+5.1VE
LZ005 10u
CZ005 (PREP)
delete(FE6XXX)
LZ001 10u
JZ204 JZ044 JZ207 JZ005
+12VS
CZ033 100u 16V
RZ044 1K (FE6200)
TZ032 BC848/B (FE6200)
RZ060 27R (FE6200)
RZ037 1K5 (FE6200)
(PREP) (FE6200)
CZ006 180p
LZ006 3u3
(PREP) (FE6200)
DZ002 LL4148
DZ003 0R (FE5100)
DZ004 LL4148
DZ005 1N4148
2K2 (FE6XXX)
LZ004 0R (FE6XXX)
CZ004 (PREP)
RZ004 0R (FE6XXX)
RZ006 (PREP)
TZ001 RN1402
CZ013 22n
delete(FE6XXX)
RZ008 0R
+5.1VE
RZ015 1K
+33VS
JZ221
CZ015 47u 50v
DZ001 (PREP)
CZ021 1n
CZ071 (PREP)
CZ070 (PREP)
RZ071 220R
220R
RZ070
JZ074
LZ074
0R
JZ075
LZ075
RZ019 56K (FE5100)
1K2 (FE6XXX)
JZ224
RI001 10R
CI011 22n
FI001 40.4MHz
DI002 BA592
+5_IF
RI007 15K
CI010 56p
RI008 15K
CI001 1n
CI002 5p6
RI004 180R
CI003 6p8
#RI003 4K7
#RI006 15K
CI009 15p
#CI008 100n
#DI001 BA592
#RI005 15K
#CI007 27p
RZ020 2K2
+5VS
#TI010 BC857B
JI042
JZ223
TZ02 RN1404

⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden

⚠ Safety Part
When repairing, use original part only

⚠ Piece de securite
N'utilisez que les pieces d'origine

/ TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF


MAIN
IZ100
TCE2ACU
31.9_TRAP
SPD2
OSD_MIX_L
NORM
B_1(L')_STDM
AUTOPROG
AV3_ON
COL_OFF
BUS_CLK_SW
BUS_DA_SW
LS050
FE-OSC
FE_HEAD
REC_ON
BS030
TO FULL ERASE HEAD
BS031
TO ACE HEAD
AE_HEAD
A_LIN_REC
A_LIN_PB
P_R_CTL1
C_BIAS
IS001
LA7286
RIPPLE FILTER
AC BIAS AUTO ADJ
MUTE
ALC DET
ALC
AUDIO_PB_ON
AUDIO_REC_ON
PB_ON
II050
TDA9818
TDA9817
(ME/U/NTSC M)
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
INTERCARRIER MODE SWITCH
VCO TWD
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VIDEO DEMODULATOR AND AMP.
FPLL
SIF AGC
VIF AMP.
FM-PLL DEMODULATOR
FI001 40.4MHz
FI030 77.8MHz
FI010 OFWK3953M
FI020 OFWK9453M OFWK9462M (NTSC M)
FI100 K6263K
IF M BD (NTSC M)
A_IF
31.9_TRP1
GND
+5VS
+5_IF
SIF
A_MUTE2
AGC
AFT
V_IF
SPD1
P_R_CTL1
C_BIAS
A_EE_REC
A_EE_PB
A_MUTE
PB_ON
AUD_REC_ON
NORM_L
B_1(L')_STDM
31.9_TRAP

MODEL\POS	DI005	FI091
PS/PE	BA592	6.5
SA/U	X	X
ME/FE	0R	6/6.5
NTSC M	0R	6/6.5

#: NOT USED IN U MODELS
*: NOT USED IN ME MODELS

$: NOT USED IN PS/PE MODELS
%: NOT USED IN NTSC M MODELS

@: FOR AUDIO DUBBING MODELS
&: FOR WIDE RANGE POWER SUPPLY

~: USED IN ECO MODELS

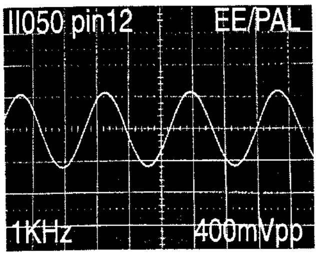
MEASUREMENTS POWER SUPPLY INTERFACE / TUNER / IF SECTION - MESURES INTERFACE ALIMENTATION / TUNER / FI - MESSUNGEN NETZEIL INTERFACE / TUNER / ZF - MISURE INTERFACCIA ALIMENTAZIONE / TUNER / IF - MEDIDAS INTERFAZ ALIMENTACIÒN / TUNER / IF

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
FE5100	1	2,6	2,6	2,6
	2	5	5	5
	3	3,1	3,1	3,1
	4	12	12	12
	5	NC	NC	NC
	6	NC	NC	NC
	7	12	12	12
	8	5,2	5,2	5,2
	9	32	32	32
	10	4,8	4,8	4,8
	11	4,5	4,5	4,5
	12	NC	NC	NC
	13	1,8	1,8	1,8
II050	1	3,3	3,3	3,3
	2	3,3	3,3	3,3
	3	0	0	0
	4	2,8	2,8	2,8
	5	2,6	2,6	2,6
	6	2,4	2,4	2,4
	7	3,5	3,5	3,5
	8	2,5	2,5	2,5
	9	2,3	2,3	2,3
	10	2,3	2,3	2,3
	11	1,6	1,6	1,6
	12	2	2	2
	13	2,7	2,7	2,7
	14	3,1	3,1	3,1
	15	1,9	1,9	1,9
	16	2,1	2,1	2,1
	17	4,4	4,4	4,4
	18	2,7	2,7	2,7
	19	2,7	2,7	2,7
	20	0	0	0
	21	4,8	4,8	4,8
	22	1,1	1,1	1,1
	23	3,2	3,2	3,2
	24	3,2	3,2	3,2
IS001	1	12	12	12
	2	0	0	0
	3	0	0	0
	4	4	4	4
	5	4,1	4,1	4,1
	6	4,1	4,1	4,1
	7	0	0	0
	8	4,1	4,1	4,1
	9	4,1	4,1	4,1
	10	4,1	4,1	4,1
	11	0	0	0
	12	0	0	0
	13	4,1	4,1	4,1
	14	4,1	4,1	4,1
	15	4,1	4,1	4,1
	16	4,1	4,1	4,1
	17	4,1	4,1	4,1
	18	0	0	0
	19	12	12	12
	20	12	12	12
	21	0	0	0
	22	0	0	0
	23	4,6	4,6	4,6

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
	24	0	0	0
TI010	B	5	5	5
	E	4,1	4,1	4,1
	C	0	0	0
TI011	B	1	1	1
	E	0,4	0,4	0,4
	C	2,7	2,7	2,7
TI020	B	1	1	1
	E	0,2	0,2	0,2
	C	4,8	4,8	4,8
TI040	B	2,1	2,1	2,1
	E	0	0	0
	C	0	0	0
TI045	B	0	0	0
	E	0	0	0
	C	2,1	2,1	2,1
TI050	B	0	0	0
	E	0	0	0
	C	3,5	3,5	3,5
TI055	B	2	2	2
	E	1,3	1,3	1,3
	C	4,8	4,8	4,8
TS004	B	0	0	0
	E	0	0	0
	C	4,6	4,6	4,6
TS030	B	12,1	12,1	12,1
	E	12,1	12,1	12,1
	C	12,1	12,1	12,1
TZ001	B	0	0	0
	E	0	0	0
	C	4,5	4,5	4,5
TZ010	B	0	0	0
	E	0	0	0
	C	2,7	2,7	2,7
TZ019	B	3	3	3
	E	0	0	0
	C	0	0	0
TZ020	B	0	0	0
	E	0	0	0
	C	2,7	2,7	2,7
TZ033	B	1,3	1,3	1,3
	E	2	2	2
	C	0	0	0
TZ034	B	2,7	2,7	2,7
	E	3,4	3,4	3,4
	C	0	0	0

POWER		MODE	
LOC	PIN	Marche	Veille
TP020	G	2	1,2
	S	0,2	0,1
	D	360	310
TP022	B	0,3	0,5
	E	0	0
	C	1,3	1,3
TP023	B	1,3	0,9
	E	2	1
	C	0,2	0
TW001	B	0,7	0
	E	0	0
	C	0	32
TW002	B	0	32
	E	31	32
	C	31	0
TP071	B	4,7	4,7
	E	5,4	5,4
	C	1,7	1,7
TP082	B	7	7
	E	12,2	0
	C	0	0
TP086	B	0	0
	E	0	0
	C	5,3	5,3
IP050	1	1	1
	2	0	0
	3	NC	NC
	4	0,3	0,5
	5	17,2	13,5
	6	0,9	1,1
TW003	B	12,8	0
	E	12,2	0
	C	13,7	13,3
TW004	B	5,9	0
	E	5,2	0
	C	5,3	5,3
TW005	B	4,6	4,6
	E	5,4	5,4
	C	5,3	5,3
TW006	B	0,7	0,7
	E	0	0
	C	0	0
TW007	B	5,9	5,9
	E	5,1	5,1
	C	5,4	5,4

POWER		MODE		
LOC	PIN	Marche	Veille	V/ECO
TW008	B	0	0	4,7
ECO1	E	5,3	5,4	4,9
Masse pin17	C	5,3	5,4	*"–16,8"*
LP050				
TW009	B	4,7	4,3	0
ECO1	E	3,9	3,5	0
	C	4	3,6	6
TW010	B	13	12,6	12,3
ECO2	E	13,7	13,3	12,9
	C	13,7	13,3	0,4
TW011	B	0,7	0,7	0
ECO2	E	0	0	0
	C	0	0	12,3



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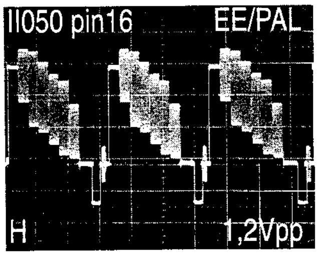


②

INFORMATION - INFORMATIONS - INFORMATIONEN - INFORMAZIONE - INFORMACIONES

(GB) The table below shows how the Commercial Reference corresponds to the R7000 series Chassis Reference number, it also gives additionnal information that can be used to identify the major components according to chassis type.

(F) Le tableau ci-dessous donne la correspondance entre les références commerciales et les types de chassis de la série R7000, de plus il apporte un complément d'informations permettant d'identifier les composants montés suivant les chassis.

(D) Die untenstehende Tabelle zeigt die Zuordnung der Handelsreferenzen und der Rahmentypen der Reihe R7000 an. Auberdem werden zusätzliche Angaben zur näheren Identifizierung der Bauteile der Rahmen gemacht.

(I) La tabella sottostante indica la corrispondenza tra i riferimenti commerciali e i tipi di telaio della serie R7000. Inoltre, completa l'informazione consentendo di identificare i componenti montati, secondo il telaio.

(E) El cuadro siguiente presenta la correspondencia ente las referencias comerciales y los tipos de chasis de la serie R7000, además ofrece una información complementaria que permite identificar los componentes montados según el tipo de chasis.

Com. ref.	Chassis	Drum	*Tuner	ECO	Beeper
VPH6800F	R7074PSR	TTN4	FE5100	YES	-
VPH6850F	R7078PSR	TTN4	FE5100	YES	-
VPH6850G	R7078ME	TB6	FE6200	YES	YES
M9860G	R7178ME	TB6	FE6200	YES	YES
FV305HV	R7374UR	TB6	FE6200	YES	YES
FV306HV	R7375UR	TB6	FE6200	YES	YES
EV600F	R7476PSR	TTN4	FE5100	YES	-
EV600G	R7476ME	TB6	FE6200	YES	YES
VK841PS	R7774PSR	TTN4	FE5100	YES	-

* Currently only FE 6200 tuners are equipped with modulators (CH21-69).

* Actuellement, seul les tuner FE 6200 sont équipés d'un modulateur(CH21-69).

* Zur Zeit sind nur die tuner FE 6200 mit einem modulator (Ch21-69) ausgestattet.

* Attualmente, solo i sintonizzatori FE 6200 sono muniti di un modulatore (CH21-69).

* Actualmente, sólo los sintonizadores FE6200 están equipados con un modulador (CH21-69).

THOMSON CONSUMER ELECTRONICS

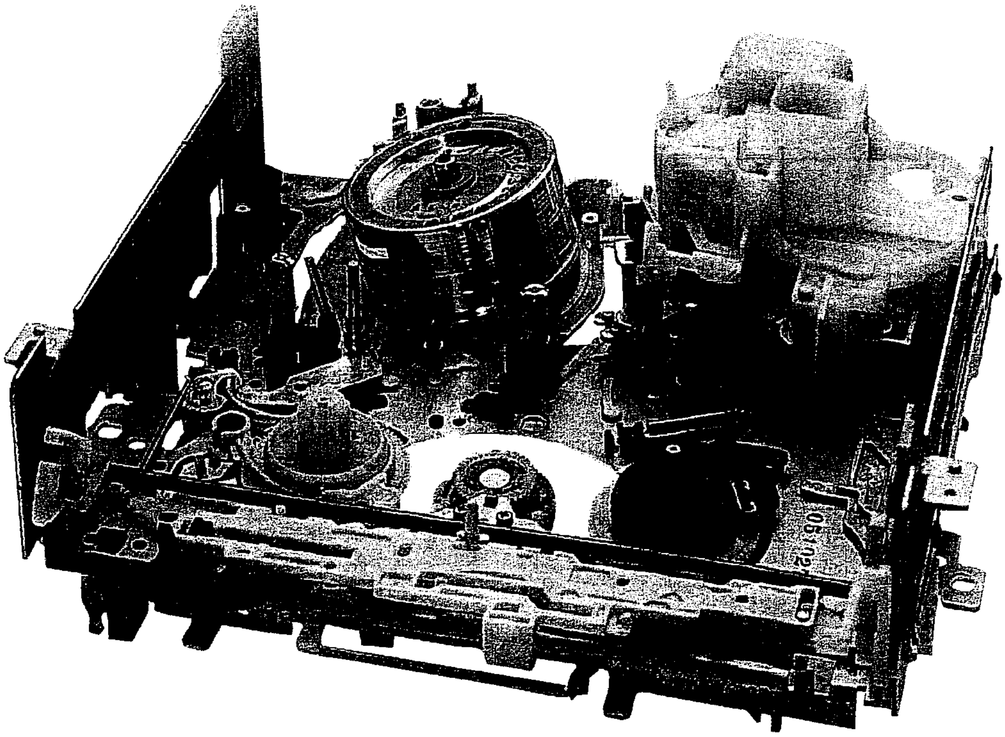
NORDMENDE THOMSON TECHNOLOGY **SABA** **TELEFUNKEN** **THOMSON**

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R4000

Mechanical adjustment - Disassembly/Assembly
Instruction de réglages mécaniques - Démontage/Remontage
Mechanische Einstellungen - Demontage/Montage
Istruzioni per la manutenzione meccanica - Smontaggio/Rimontaggio
Ajustes mecanicos - Desmontar/Volver a montar



WARNING :	*Before servicing this chassis read the safety recommendations.*
ATTENTION :	*Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG :	*Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE :	*Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE :	*Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Deutschland

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4404 SENSAR		4 + 2 (LP)	PAL / NTSC	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5021		2		1
VR 5025		2		1
VR 5035		3		1
VR 5040		4		1
VR 5045		4		1
M 9415	TELEFUNKEN	2	PAL(MESECAM)	1
M 9420		2	PAL(MESECAM)	1
M 9423		2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2

Export

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5025		2	PAL(MESECAM)	1
VR 5035		3	PAL(MESECAM)	1
VR 5040		4	PAL(MESECAM)	1
M 9420	TELEFUNKEN	2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
V 1400	THOMSON	2	PAL(MESECAM)/SECAM	1
VP 2400		2	PAL(MESECAM)/SECAM	1
VP 4480		4 (LP)	PAL(MESECAM)/SECAM	1
VPH 6400		4 + 2	PAL(MESECAM)/SECAM	2
VPH 6480		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
VPH 6490		4 + 2	PAL / SECAM / NTSC	2

INHALT
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I - ALLGEMEINES

Dieses Laufwerk entspricht dem VHS-Standard und wird mit 3 Motoren betrieben:
Kopftrommel-, Capstan- (Direktantrieb) und Funktionssteuermotor (zum Antrieb der Wickelteller und der Funktionssteuernocke). Das neue Laufwerk zeichnet sich durch einen Kopftrommelmotor aus, dessen Stator auf der Hauptplatine integriert ist.

II - BESCHREIBUNG DES LAUFWERKS

Liste der wichtigsten Teile:

Abb. 1:
1 - Andruckrolle
2 - Bandführung
6 - Ton- / Kontrollkopf
10 - Trommelantriebseinheit
11 - Löschkopf
13 - Antistatikbürste
Abb. 2:
15 - Bewegliche Bandführung
20 - Funktionsteuermotor
22 - Steuernocke
28 - Antriebsrollenachse
29 - Wickelteller-Antriebsriemen
33 - Zwischenrolleneinheit
42 - Aufnahmesperre
43 - Abwickelteller
44 - Aufwickelteller
47 - Bandzugarm

I - GENERAL

This mechanism complies fully with the VHS standard. It comprises of three motors; drum and capstan, which are both direct drive and a function control driving the function cam mechanism. This mechanism can be identified by the construction of the drum motor, the stator winding are attached to the main board.

II - INTRODUCTION TO THE MECHANISM

List of the main parts :

Fig. 1 :
1 - Pinch roller assembly
2 - Tape guide
6 - Audio / CTL Head
10 - Drum motor assembly
11 - Full Erase head
13 - Anti-static brush
Fig. 2 :
15 - Mobile tape guide
20 - Function control motor
22 - Drive cam
28 - Capstan motor
29 - Reel drive belt
33 - Intermediate pulley
42 - Recording safety lock
43 - Supply reel hub
44 - Take-up reel hub
47 - Tape back tension arm

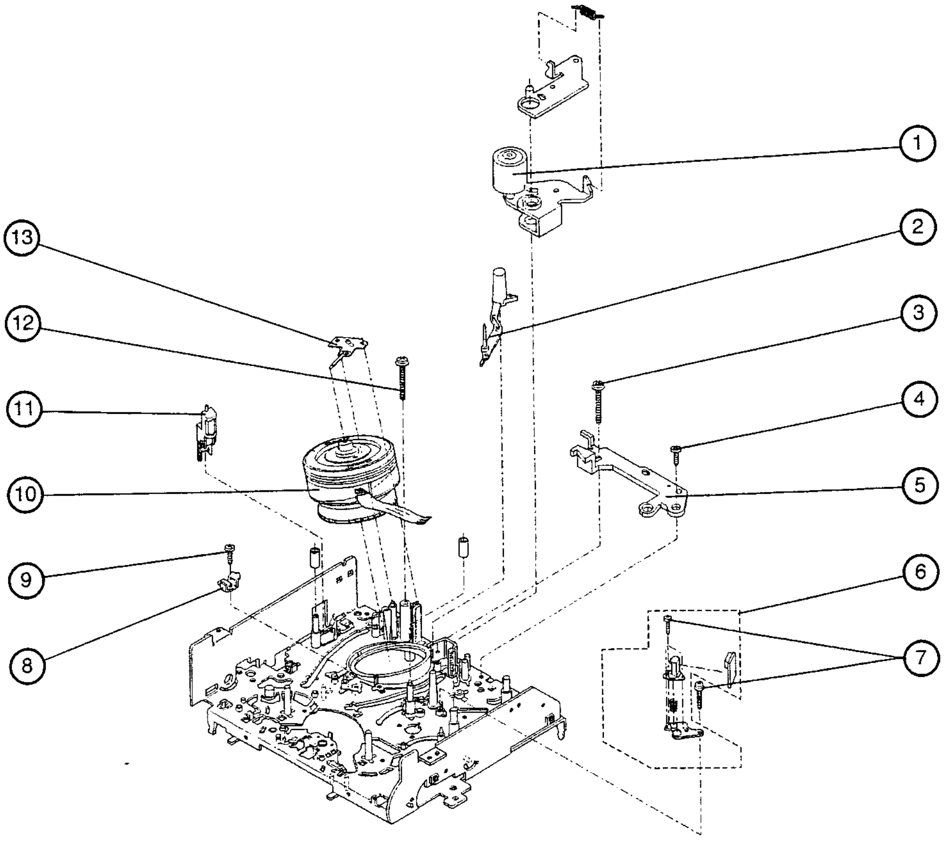


fig. 1

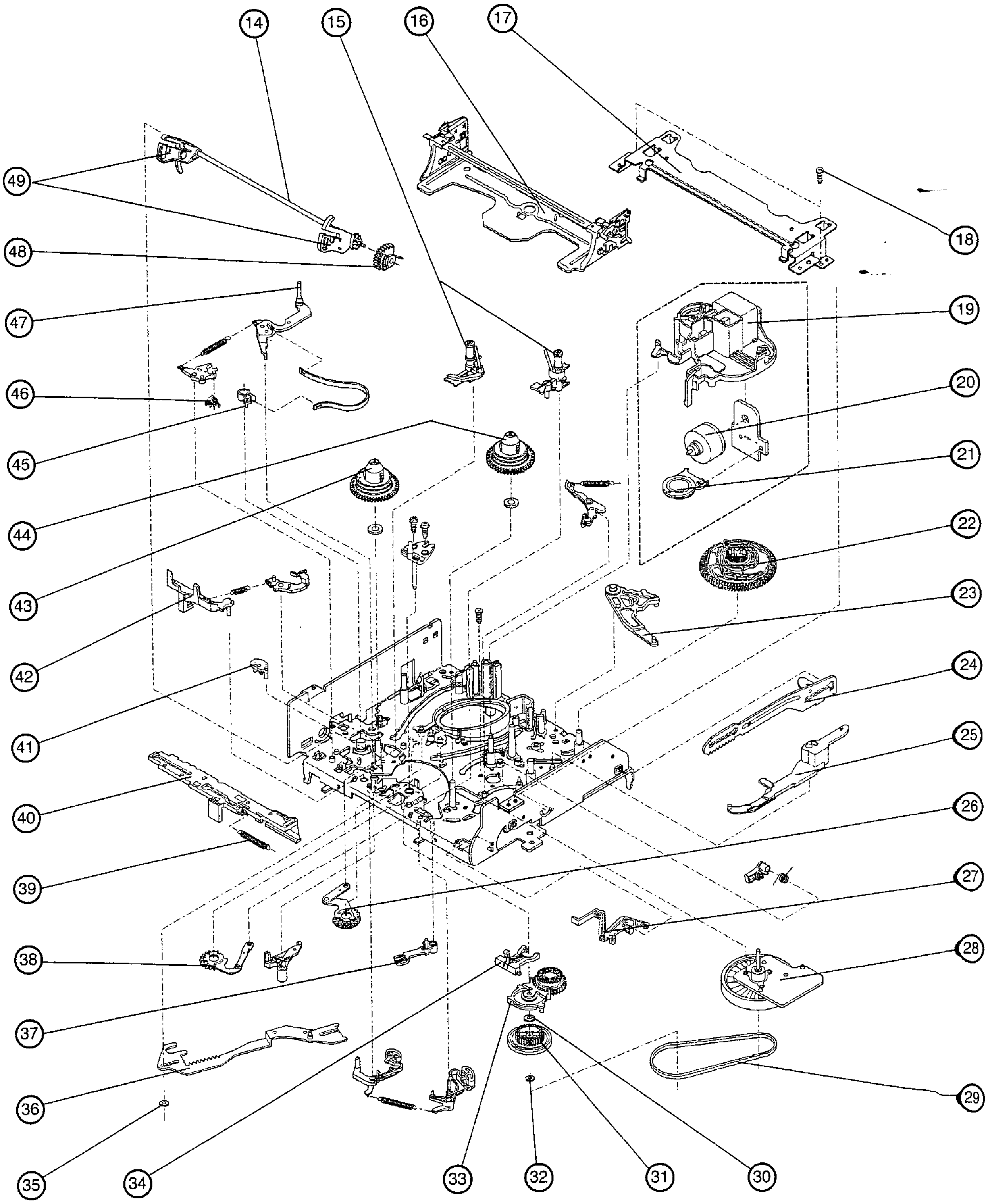


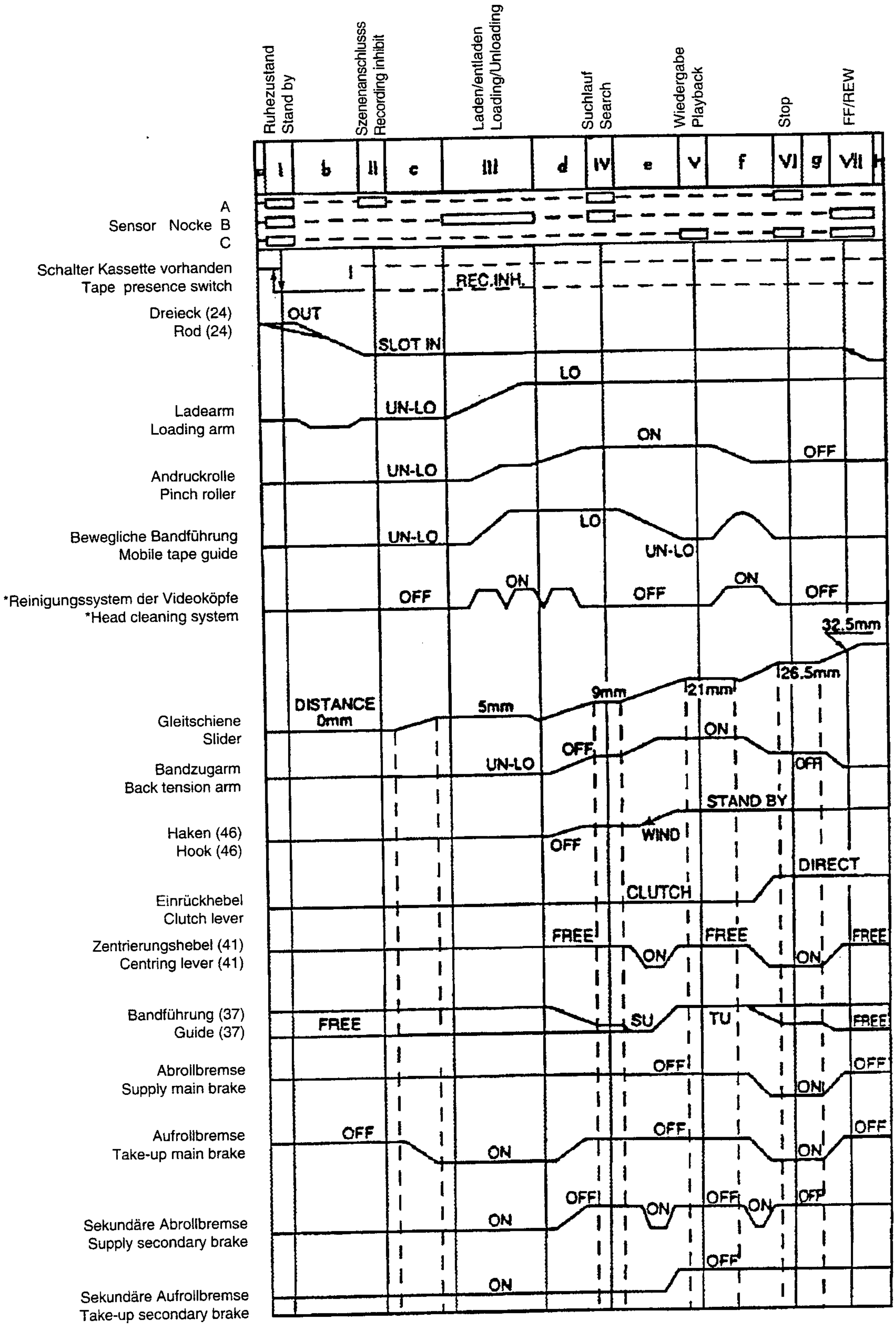
fig. 2

III - FUNKTIONSBESCHREIBUNG

1 - KONTROLLE DER FUNKTIONSABLÄUFE

III - DESCRIPTION OF THE OPERATION

1 - CHECKING FUNCTION SEQUENCE



Ruhezustand
Stand by
Szenenanschlusss
Recording inhibit
Laden/entladen
Loading/Unloading
Suchlauf
Search
Wiedergabe
Playback
Stop
FF/REW
I
b
II
c
III
d
IV
e
V
f
VI
g
VII
A
Sensor Nocke B
C
Schalter Kassette vorhanden
Tape presence switch
REC.INH.
Dreieck (24)
Rod (24)
OUT
SLOT IN
Ladearm
Loading arm
LO
UN-LO
Andruckrolle
Pinch roller
UN-LO
ON
OFF
Bewegliche Bandführung
Mobile tape guide
UN-LO
LO
UN-LO
*Reinigungssystem der Videoköpfe
*Head cleaning system
OFF
ON
OFF
ON
OFF
Gleitschiene
Slider
DISTANCE 0mm
5mm
9mm
21mm
26.5mm
32.5mm
Bandzugarm
Back tension arm
UN-LO
OFF
ON
OFF
Haken (46)
Hook (46)
OFF
WIND
STAND BY
Einrückhebel
Clutch lever
CLUTCH
DIRECT
Zentrierungshebel (41)
Centring lever (41)
FREE
ON
FREE
ON
FREE
Bandführung (37)
Guide (37)
FREE
SU
TU
FREE
Abrollbremse
Supply main brake
OFF
ON
OFF
Aufrollbremse
Take-up main brake
OFF
ON
OFF
ON
OFF
Sekundäre Abrollbremse
Supply secondary brake
ON
OFF
ON
OFF
ON
OFF
Sekundäre Aufrollbremse
Take-up secondary brake
ON
OFF

*- If fitted

IV- WARTUNG DES LAUFWERKS

⚠ Module nicht bei eingeschaltetem Gerät entfernen ! Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

1 - ZUGANG ZUM LAUFWERK

1) ABNEHMEN DES GEHÄUSES *(Abb. 3)*

- 3 Schrauben an der Rückseite des Gehäuses und, falls vorhanden, die zwei seitlichen Schrauben entfernen.
- Das Gehäuseoberteil leicht nach hinten ziehen und abheben.
- Die zwei Schrauben, mit denen die Frontblende befestigt ist, links und rechts am Kassettenschacht entfernen.
- 6 Clips (4 an der Oberseite und 2 an der Unterseite) anheben und die Frontblende abnehmen
- Die 2 Schrauben (S1), mit denen das Netzteil befestigt ist, entfernen. Das Netzteil herausnehmen.
- Verbindungsleitungen zur Frontplatine lösen.
- Die 6 Clips (I1), die die Hauptplatine halten, lösen und die Einheit Laufwerk/Platine herausheben.

2) AUSBAUEN DES LAUFWERKS *(Abb. 3, 4)*

- Verbindungsleitungen zu Funktionskontroll- und Kopftrommel-Motor sowie zum Ton-/ Kontrollkopf lösen.
- Schraube (S2) und Antriebsriemen vom Capstanmotor (29) entfernen.
- Schraube (12) an der Antistatikbürste entfernen.
- Schraube (9) und Metallstück (8) entfernen.
- Die 4 Halteclips (I2) lösen und die Laufwerkseinheit anheben; dabei auf die Anschlüsse des Löschkopfs und des Capstanmotors achten.

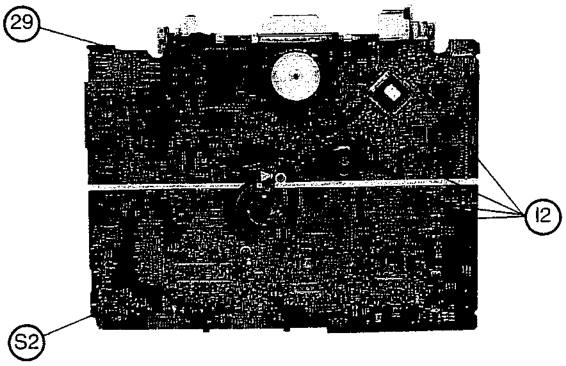


fig. 4

3) AUSBAUEN UND WIEDEREINBAUEN DER KASSETTENHALTERUNG *(Abb. 3 bis 5b)*

AUSBAUEN:*(Abb. 3 und 4)*
- 2 Schrauben links und rechts am Kassettenschacht lösen.
- Den oberen Teil des Kassettenschachtes abheben.
- Den Kassettenhalter bis zum vorderen Anschlag zurückziehen.
- Die zur Kopftrommel zeigende Seite des Kassettenhalters leicht anheben.
- Die weißen Hebel links und rechts am Kassettenhalter entriegeln und den Kassettenhalter in Richtung Kopftrommel schieben, bis die hinteren Führungszapfen aus ihrer Führung genommen werden können
- Jetzt den Kassettenhalter wieder in die entgegengesetzte Richtung ziehen, bis auch die vorderen Führungszapfen aus der Führung genommen werden können.

IV- MECHANISM MAINTENANCE

⚠ Do not disconnect modules when they are energized! Repairs on power supply section are to be carried out only with isolating transformer.

1 - ACCESS TO MECHANISM

1) REMOVAL OF THE CHASSIS *(fig. 3)*

- Remove 3 screws at the rear of the cover and the two side screws.
- Pull the cover slightly backwards and lift it off.
- Remove 2 screws and release 6 clips (4 on the top and 2 on the bottom) securing the front panel.
- Remove 2 screws (S1) securing the power supply unit.
- Carefully remove the power supply unit.
- Unclip the front panel.
- Release 6 clips (I1) securing the main board and lift the mechanism/board assembly out.

2) REMOVAL OF THE MECHANISM *(fig. 3 and 4)*

- Disconnect the function control and drum motors and the audio control head leads.
- Remove screw (S2) and the capstan motor belt (29).
- Remove screw (12) securing the anti-static brush.
- Remove screw (9) and the metal part (8).
- Release the 4 securing clips (I2) and lift the assembly paying attention to the connectors of the full erase head and of the capstan motor.

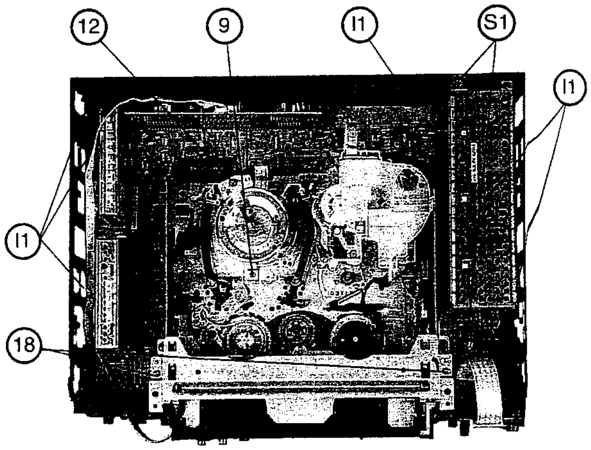


fig. 3

3) REMOVAL AND REFITTING OF THE CASSETTE HOLDER *(fig. 3 to 5b)*

REMOVAL:*(fig. 3 and 4)*
- Take out two screws at the left and the right side of the upper part of the cassette holder.
- Remove the upper part of the cassette holder.
- Pull the remaining part to the upper end position. (Eject position)
- Lift the cassette holder at the side, which shows to the drum
- Release the white levers (left and right of the cassette holder) and push the cassette holder towards the drum until the guide pins at the rear side come out of the guide rails.
- Now pull the cassette holder in the opposite direction until the guide pins at the front side also come out of the guide rails.

WIEDEREINBAUEN: *(Abb. 5a, 5b, 5c und 7)*
- Die vorderen Ansätze des Kassettenträgers wie in Abb. 5a dargestellt einsetzen.
- Die hinteren Ansätze (P1) des Kassettenträgers in Richtung des Trommelmotors kippen.
- Die Hebel (P2) nach oben halten und dabei leicht den Kassettenträgers nach hinten drücken, um so die Ansätze (P3) in die Gleitschienen einzusetzen.
- Den Hebel der Kassettenträgerklappe (27) einsetzen, Abb. 7.
- Die Hebel (P2) wie in Abb.5b dargestellt positioneren, bevor der obere Teil wieder aufgesetzt wird (Abb.5c).

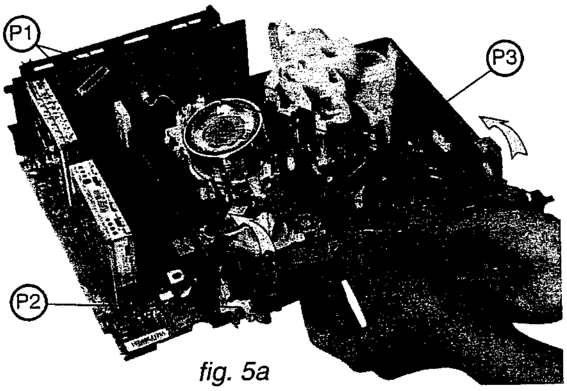


fig. 5a

2 - AUSTAUSCHEN DER WICHTIGSTEN LAUFWERKTEILE

1) AUSTAUSCH DER TROMMELANTRIEBSEINHEIT:
(Abb. 6)

AUSBAUEN:
- Um die Trommelantriebseinheit auszubauen, ist es nicht nötig, das Laufwerk herauszunehmen.
- Den Trommelantrieb abtrennen.
- Schraube (12) und Antistatikbürste entfernen.
- Die Schrauben (3), (4) und (9) sowie die Metallteile entfernen.
- Das Reinigungssystem der Videoköpfe ausbauen.
- Die Trommelantriebseinheit herausnehmen.

WIEDEREINBAUEN:
- In umgekehrter Reihenfolge zum Ausbau vorgehen und dabei vor dem Befestigen von Teil (5) die Trommel leicht gegen den Abwickelteller drücken.
- Den Bandlauf überprüfen.

REFITTING: *(fig. 5a , 5b,5c and 7)*
- Move the pins at the front of the cassette holder as shown in figure 5a.
- Move the pins at the back of the cassette holder towards the drum motor.
- Whilst holding the levers , gently push the cassette holder back, so that the back pins go into runners .
- Position the lever of the cassette holder door as shown in figure 7.
- Position the levers as shown in figure 5b before fitting the top unit (figure 5c).

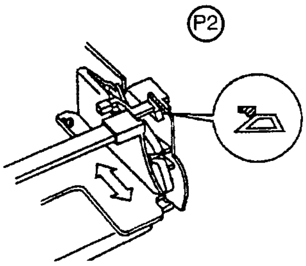


fig. 5b

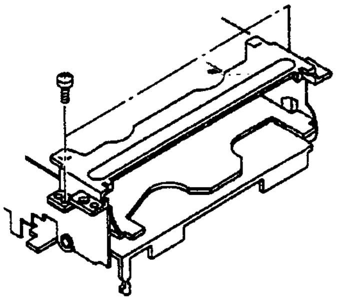


fig. 5c

2 - REPLACEMENT OF THE MAIN PARTS ON THE MECHANISM.

1) REPLACEMENT OF THE DRUM MOTOR:
(fig. 6)

REMOVAL:
- It is not necessary to remove the mechanism, in order to remove the drum motor.
- Disconnect the drum motor.
- Remove screw (12) and the anti-static brush.
- Remove screws (3), (4) and (9) and metal parts.
- Remove video head cleaning system.
- Remove the drum motor.

REFITTING:
- Perform removal operations in reverse order by pushing the drum slightly towards the supply reel before securing the part (5).
- Check the tape path.

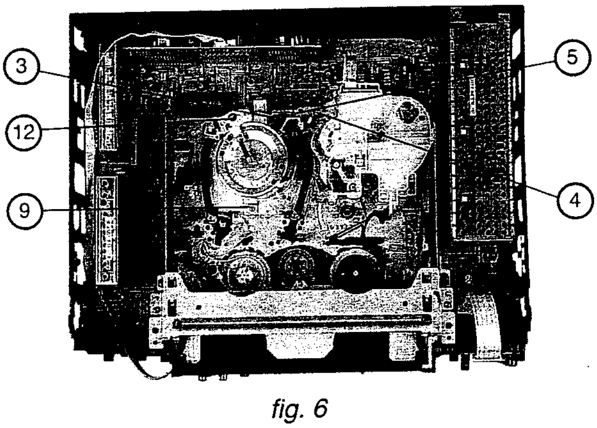


fig. 6

2) AUSTAUSCH DES BANDZUGARMS:
(Abb. 7 und 8)

AUSBAUEN:
- Den Clip (I3) öffnen und den gezahnten Hebel (48) herausziehen.
- Den Hebel (27) entfernen.
- Die Antriebsachse (14) der Kassettenhalterung nach rechts schieben, um sie aus ihrem Sitz zu nehmen.
- Die Achse erst links, dann rechts anheben.
- Die Feder (39) lösen.
- Den Clip (I4) lösen und den Bandzugarm und die Bremse anheben.
- Den Clip (I5) öffnen, um die Befestigung (45) der Bandzugbremse zu lösen.

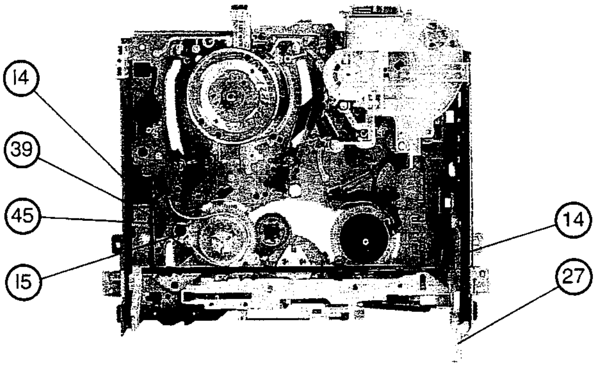


fig. 7

WIEDEREINBAUEN:
- Die Befestigung (45) der Bandzugbremse anbringen.
- Die Bremse um den Abwickelteller legen.
- Den Bandzugarm einsetzen und andrücken, um ihn festzuklemmen.
- Die Feder (39) wieder anbringen.
- Die Achse (14) in ihren Sitz einsetzen.
- Den gezahnten Hebel (48) einsetzen und dabei den ersten Zahn mit dem Kennzeichen (M1) ausrichten.
- Nach dem Austausch des Bandzugarms muß dessen Position gemäß der Angaben auf Seite 13 neu eingestellt werden.

3) AUSTAUSCH VON TON-UND KONTROLLKOPF:
(Abb.9)

AUSBAUEN:
- Den Stecker (C1) herausziehen.
- Die 2 Schrauben (7) entfernen und dann die Kontrollkopfeinheit anheben.

2) REPLACEMENT OF THE TAPE BACK TENSION ARM
(fig. 7 and 8)

REMOVAL:
- Release clip (I3) and remove the toothed lever (48).
- Remove lever (27).
- Slide the cassette holder pin (14) to the right in order to release it from its housing.
- Lift the pin from the left and then from the right.
- Remove spring (39).
- Release clip (I4) and lift the tape back tension arm and brake.
- Release clip (I5) in order to free the attachment (45) of the tape back tension brake.

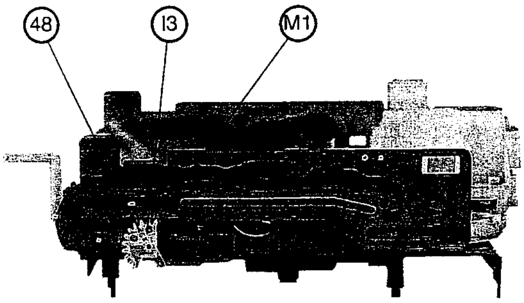


fig. 8

REFITTING:
- Fit attachment (45) of the tape back tension brake.
- Wind the brake around the supply reel.
- Insert the tape tension arm and press to clip in to position.
- Refit spring (39).
- Refit pin (14) in its housing.
- Fit the toothed part (48) by aligning the first tooth with the marking (M1).
- After replacing the tape back tension arm, its position must be re-set as shown in page 13.

3) REPLACEMENT OF THE AUDIO-CONTROL HEAD.
(fig. 9)

REMOVAL:
- Disconnect connector (C1).
- Remove 2 screws (7) and lift the audio-control head.

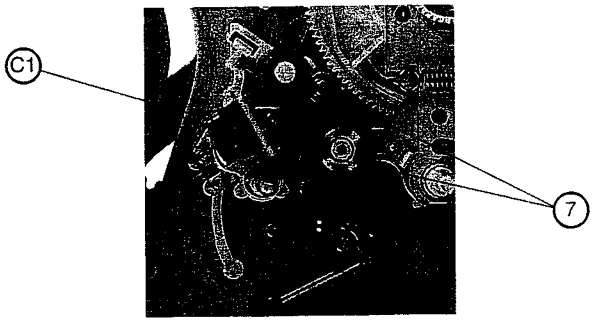


fig. 9

WIEDEREINBAUEN:
- In umgekehrter Reihenfolge zum Ausbau vorgehen.
- Folgende Einstellungen vornehmen: Azimut, Höhe, Neigungswinkel und Kompatibilität (siehe Seite 15, Abschnitt B).

4) AUSTAUSCHEN DES FUNKTIONSKONTROLLMOTORS:
(Abb. 10 und 11)

AUSBAUEN:
- Das Reinigungssystem der Videoköpfe ausbauen.
- In der angegebenen Reihenfolge die 4 Clips (I6), (I7), (I8) und (I9) lösen. Dann die Einheit Gehäuse /Funktionskontrollmotor anheben.
- Das Teil (P4) nach vorherigem Öffnen des entsprechenden Clips anheben.
- Das Getriebe (P5) herausnehmen.
- Das Ende der Gewindestange (P6) leicht anheben.
- Den Clip (I10) des Funktionsschalters lösen.
- Die Einheit Motor/Schalter aus der Gleitschiene (P7) nehmen.
- Den Motor ablöten.

WIEDEREINBAUEN:
- Darauf achten, daß das Loch (H1) der Nocke über dem des Gehäuses liegt.
- In umgekehrter Reihenfolge zum Ausbau vorgehen, ohne dabei zu vergessen, die Gewindestange in ihre Clips einzusetzen und darauf zu achten, daß die Kennzeichen (M2) des Funktionsschalters und (M3) des Gehäuses übereinstimmen.

REFITTING:
- Perform the removal operations in reverse order.
- Adjust the azimuth, height, inclination and check compatibility (see page 15 section B).

4) REPLACEMENT OF THE FUNCTION CONTROL MOTOR:
(fig. 10 and 11)

REMOVAL:
- Remove the video head cleaning system.
- Release, in this order, 4 clips (I6), (I7), (I8) and (I9) securing the casing and function control motor assembly and lift it.
- Lift part (P4) after releasing its clip.
- Remove gear (P5).
- Slightly lift the end of the worm screw (P6).
- Release clip (I10) of the function switch.
- Remove the motor/switch assembly from the slide rail (P7).
- Unsolder the motor connections.

REFITTING:
- Check that hole (H1) on the cam is exactly over the hole on the chassis.
- Perform removal operations in reverse order remembering to insert the worm screw in its clips and making sure that the markings (M2) on the function switch correspond to the markings (M3) on the casing.

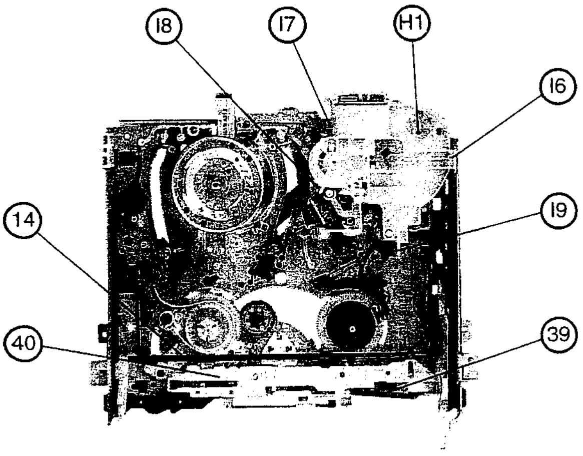


fig. 10

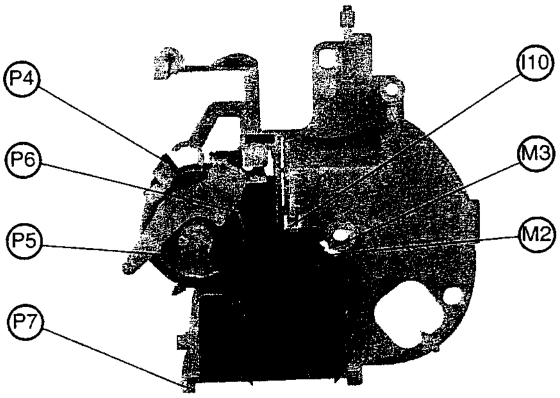


fig. 11

5) AUSTAUSCH DER FUNKTIONSSTEUERNOCKE:
(Abb. 10, 12, 13 und 14)

AUSBAU:
- Die Einheit Gehäuse/Funktionskontrollmotor gemäß den Angaben des vorherigen Kapitels ausbauen.
- Die Antriebsachse (14) der Kassettenhalterung ausbauen.
- Die Feder (39) und die Gleitschiene (40) entfernen.
- Die Andruckrolle (1) und den Hebel (25) entfernen.
- Die Nocke herausnehmen.

5) REPLACEMENT OF THE CONTROL CAM:
(fig. 10, 12, 13 and 14)

REMOVAL:
- Remove the casing and function control motor assembly as discribed in the previous section 4.
- Remove cassette holder drive pin (14) .
- Remove spring (39) and the slide rail (40).
- Remove pinch roller (1) and the lever (25).
- Remove the cam.

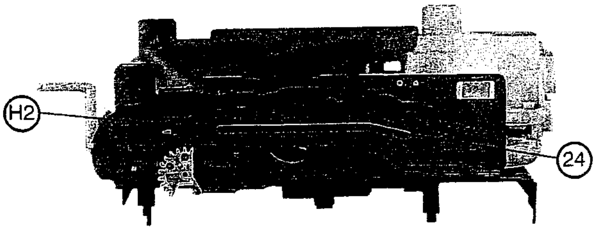


fig. 12

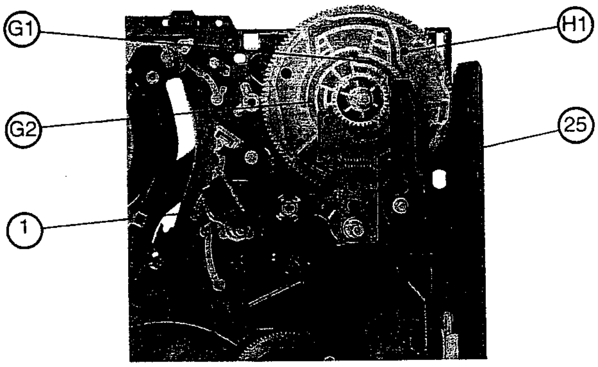


fig. 13

WIEDEREINBAUEN:

- Die beweglichen Bandführungen und den Bandzugarm am Anschlag "Ausgabe" festhalten.
- Den Hebel (23) montieren und dabei sorgfältig seinen Zapfen in das Loch des Dreiecks (24) einführen.
- Das Dreieck (24) so positionieren, daß das Loch (H2) über dem des Gehäuses liegt.
- Die Nocke so positionieren, daß das Loch (H1) über dem des Gehäuses liegt.
- Den Hebel (25) einsetzen und dabei seinen Zapfen in die Auskehlung (G1) einführen.
- Die Andruckrolle unter Einführen des Zapfens in die Auskehlung (G2) anbringen und dann die Einheit Gehäuse/Funktionskontrollmotor einsetzen. Dabei ist darauf zu achten, daß das Kennzeichen auf dem Schalter dem des Gehäuses gegenüberliegt.
- Die Gleitschiene (40) einsetzen und die Feder (39) wieder anbringen.

6) AUSTAUSCH DER LADEARME:
(Abb. 15 und 16)

AUSBAU:

- Den Clip (35) entfernen und den Antriebshebel (36) der Ladearme abnehmen.
- Die Ladearme anheben.

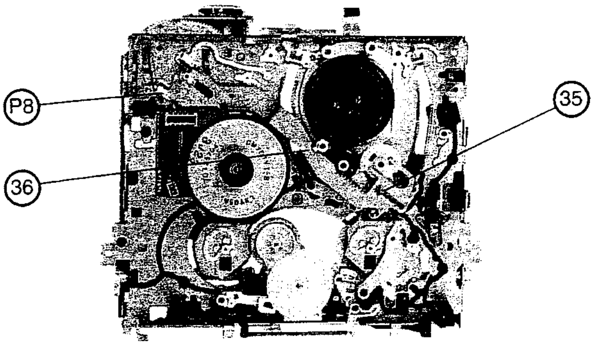


fig. 15

WIEDEREINBAU:

- Die beweglichen Bandführungen am Anschlag "Ausgabe" festhalten.
- Erst den Aufroll- dann den Abroll-Ladearm einbauen, und zwar so, daß sich die Kennzeichen (M4) und (M5) gegenüberliegen.
- Das Ende des Hebels (36) soweit in die Gleitschiene (P8) schieben, bis sich das Kennzeichen (M6) und der erste Zahn des Aufrollgetriebes einander gegenüberliegen.
- Den Clip wieder anbringen.

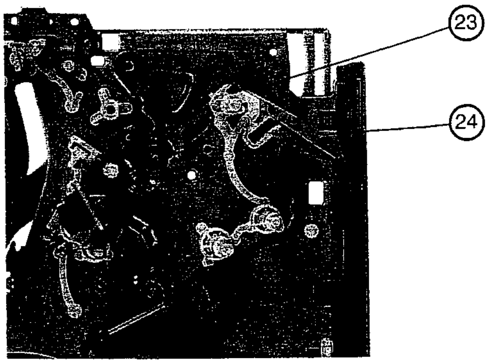


fig. 14

REFITTING

- Hold the mobile guide rails and the tape back tension arm against the unloading stop.
- Fit lever (23) making sure that the nipple is fitted inside the hole on the rod (24).
- Position the rod (24) so that hole (H2) is exactly over the hole on the chassis.
- Position the cam so that hole (H1) is exactly over the hole on the chassis.
- Fit lever (25) by inserting its nipple in the groove (G1).
- Fit the pinch roller by inserting its nipple in the groove (G2) and then fit the casing and function control motor assembly, making sure that the marking on the switch is opposite the marking on the casing.
- Fit slide rail (40) and spring (39).

6) REPLACEMENT OF THE TAPE LOADING ARMS
(fig. 15 and 16)

REMOVAL:

- Remove clip (35) and remove the tape loading arm drive lever (36).
- Remove the take-up and supply insertion arms.
- Remove mobile tape guides .

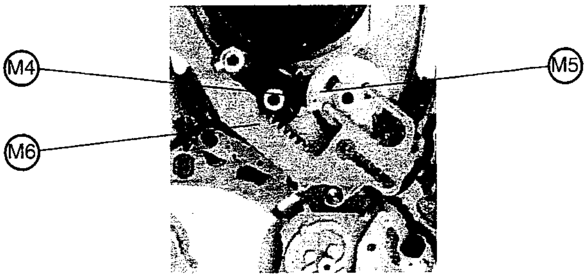


fig. 16

REFITTING:

- Fit the mobile tape guides and hold against the play position on the main deck.
- Fit the take-up guide insertion arm followed by the supply guide insertion arm making sure that the alignment holes (M4) and (M5) are facing each other.
- Insert the end of the lever (36) in the slide rail (P8) and then slide it until the marking (M6) is facing the first tooth of the take-up gear.
- Refit the clip.

7) AUSTAUSCHEN DES ZWISCHENGETRIEBES:
(Abb. 17, 18 und 19)

AUSBAUEN:
- Die Gleitschiene (40) ausbauen.
- Den Clip (32) und das Getriebe (31) entfernen.
- Den Clip (I11) lösen und die Führung (37) herausnehmen.
- Den Clip (30) entfernen und das Zwischengetriebe (33) anheben.

7) REPLACEMENT OF THE INTERMEDIATE PULLEY:
(fig. 17, 18 and 19)

REMOVAL:
- Remove slide rail (40).
- Remove clip (32) and gear (31).
- Release clip (I11) and remove guide (37).
- Release clip (30) and lift the intermediate pulley (33) off.

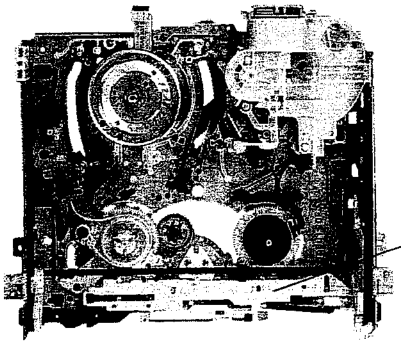


fig. 17

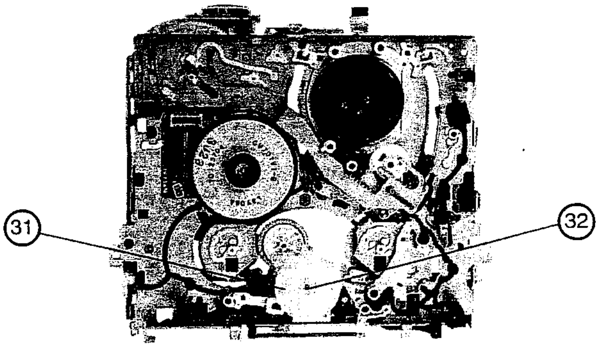


fig. 18

WIEDEREINBAUEN:
- Den Einrückhebel (34) in die Auskehlung des Zwischengetriebes einführen und dann dieses auf seiner Achse positionieren.
- In umgekehrter Reihenfolge zum Ausbau vorgehen.

REFITTING :
- Insert the clutch tab (34) in the groove of the intermediate pulley and fit the latter on its spindle.
- Perform the removal operations in reverse order for the other parts.

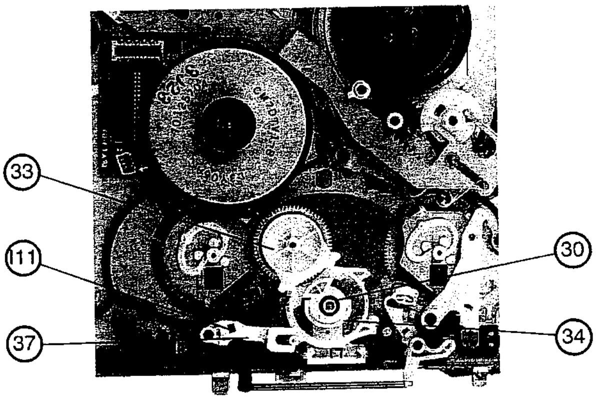


fig. 19

V - MECHANISCHE EINSTELLUNGEN UND KONTROLLEN

ERFORDERLICHES MATERIAL:

- Bandzug-Meß-Kassette.
- Kassette MH4.
- Zweistrahloszilloskop mit Bandbreite >10 MHz.
- Fernsehgerät oder Farbmonitor.

1 - EMPFEHLUNGEN DES HERSTELLERS:

- Nach allen Eingriffen an einem Laufwerk ist es ratsam, die Reinigungs-, Überprüfungs und Einstellarbeiten des Bandlaufs vorzunehmen.

V - ADJUSTMENTS AND MECHANICAL CHECKS

EQUIPMENT REQUIRED:

- Torque measurement cassette .
- MH4 tape.
- One dual-trace oscilloscope, pass band > 10 MHz.
- One colour television set or monitor.

1 - MANUFACTURER RECOMMENDATIONS:

- Before any work is carried out on the mechanism, the tape path should be cleaned, checked and adjusted.
- Check that the mobile tape guides rotate freely.

- Stellen Sie sicher, daß sich die beweglichen Bandführungen frei drehen.
- Nach dem Einlegen der Kassette prüfen, ob sich die beweglichen Bandführungen in ihren Endpositionen befinden.
- Prüfen, ob die Capstanachse und die Andruckrolle parallel zueinander stehen.
- Mit einem Tupfer alle Partien reinigen, die sich in direktem Kontakt zum Band befinden.
- Zur Reinigung der Kopftrommel, der Videoköpfe und des Drehtransformators wird empfohlen, Baumwollhandschuhe zu tragen, um Fettablagerungen auf den Flächen zu verhindern, die mit dem Band in Berührung kommen.

- After insertion, check that the mobile tape guides are correctly positioned in their stops.
- Check that the capstan shaft and the pinch roller are parallel.
- Using a pad, clean all the parts directly in contact with the tape.
- To clean the video head drum , it is recommended to wear cotton gloves and use a pad so that there are no grease marks left on the surfaces in contact with the tape.

2 - EINSTELLEN DER BANDZUGBREMSE:

(Abb. 20)

- Die Kassettenhalterung ausbauen.
- Den Videorecorder auf Wiedergabe schalten.
- Mit einem Schraubendreher die Schraube (S3) soweit festdrehen, bis sich der BANDZUG-Fühlhebel 7,5 ± 1mm vom Gehäuserand entfernt befindet (durch den langen Strich (M7) gekennzeichnet).
- Den Bandzug wie nachstehend angegeben überprüfen.

2 - TAPE BACK TENSION BRAKE ADJUSTMENT

(fig. 20)

- Remove the cassette holder.
- Set mechanism in playback mode.
- Using a screwdriver turn screw (S3) so that the arm tension pin is 7.5 ± 1 mm from the edge of the chassis (marked by the long line (M7)).
- Check the tape tension as shown below.

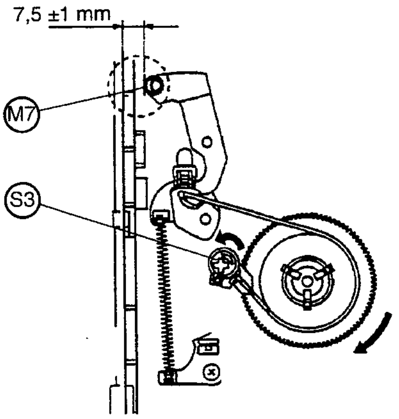


fig. 20

3 - ÜBERPRÜFUNG DES BANDZUGS UND DES WICKELTELLER-DREHMOMENTES:

BANDZUG :
- Die Bandzug-Meßkassette abspielen.
- Der Bandzug auf dem Abwickelteller muß zwischen **45** und **95** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

WICKELTELLER-DREHMOMENT :
- Das Drehmoment des Aufwickeltellers muß zwischen **125** und **200** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

3 - CHECKING THE BACK TAPE TENSION AND THE SUPPLY REEL TORQUE:

TAPE TENSION:
- Use the torque measurement cassette in the Playback mode.
- The tension on the tape on the reel must be between **45** and **95** gr/cm.
- If the tension lies outside these values, replace the clutch assembly.

REEL TAKE-UP TORQUE:
- The torque on the take-up reel must be between **125** and **200** gr/cm.
- If this is not the case, replace the take-up reel drive clutch assembly.

4 - STATIK-EINSTELLUNGEN AM BANDLAUF:

(Abb. 21)

VORSICHTSMASSNAHMEN:
Der Bandlauf wurde im Werk präzise eingestellt, er braucht also nicht nachgestellt werden. Dennoch können Verschleißerscheinungen oder ein Defekt des Gerätes, der

4 - STATIC ADJUSTMENTS OF THE TAPE PATH: *(fig. 21)*

PRECAUTIONS:
The video tape path is precisely aligned at the factory and breakdown may require the replacement of parts and necessitate the adjustment of the tape path. **For this**

das Auswechseln eines sich auf dem Bandlauf befindlichen Teiles erforderlich macht, dazu führen, daß der Bandlauf neu eingestellt werden muß. **Wir empfehlen, für diesen Arbeitsgang keine Abgleich-Kassette zu verwenden.** Schalten Sie das Gerät auf Wiedergabe und ziehen Sie nach erfolgtem Einfädeln den Netzstecker. Überprüfen Sie die richtige Bandlage in der Mechanik: das Band muß den Bandzugpin, den Löschkopf, die beweglichen Bandführungen, die Ton-/Kontrollkopfeinheit, die Videokopftrommel und die festen Aufrollbandführungen berühren.

operation, it is recommended that the alignment test tape is not used. Load a normal video cassette, select the PLAYBACK mode and allow the tape to fully load, switch OFF the power . Check that the tape is correctly loaded around the mechanism, the tape must be in contact with the following items, back tension pole, the full erase head, tape guides, video head drum and audio-control head.

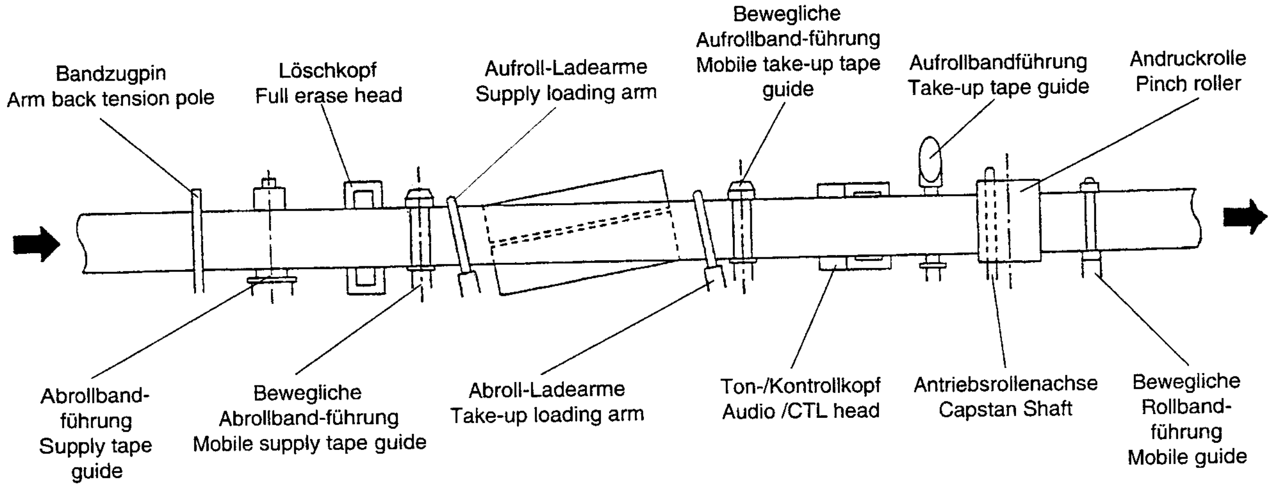

Bandzugpin
Arm back tension pole
Löschkopf
Full erase head
Aufroll-Ladearme
Supply loading arm
Bewegliche Aufrollband-führung
Mobile take-up tape guide
Aufrollbandführung
Take-up tape guide
Andruckrolle
Pinch roller
Abrollband-führung
Supply tape guide
Bewegliche Abrollband-führung
Mobile supply tape guide
Abroll-Ladearme
Take-up loading arm
Ton-/Kontrollkopf
Audio /CTL head
Antriebsrollenachse
Capstan Shaft
Bewegliche Rollband-führung
Mobile guide

fig. 21

VOREINSTELLUNG DER BEWEGLICHEN BANDFÜHRUNGEN:
Wenn das Band an einer der Bandführungen nicht glatt anliegt, diese so einstellen, bis das Band glatt anliegt.

VOREINSTELLUNG DES TON-/KONTROLLKOPFES:
(Abb. 22)
Wenn das Band an der festen Aufrollbandführung nicht glatt anliegt, den Neigungswinkel (I) der Ton-/Kontrollkopfeinheit nachstellen.

MOBILE TAPE GUIDE PRE-SETTING:
If there is tape folding on one of the mobile tape guide, adjust the position of the guide for correct alignment.

AUDIO CONTROL HEAD PRE-SETTING:
(fig. 22)
If the tape folds on the take-up tape guide, adjust the inclination (I) of the audio control head.

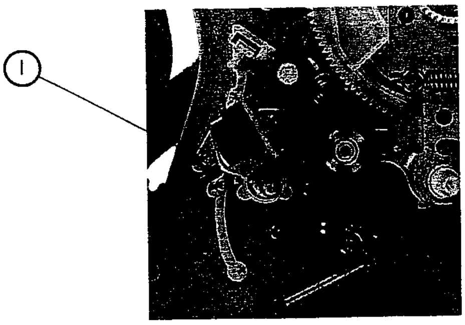


fig. 22

5 - DYNAMIK-EINSTELLUNGEN AM BANDLAUF:

Für diese Dynamik-Einstellungen:
- Die Kassettenhalterung ausbauen.
- Die Grauabstufungen der Referenzkassette ablesen.
- Auf einem Zweistrahl-Oszilloskop (mit Drum Flip Flop (BT002) getriggert) das Video-FM-Signal (BV131) sichtbarmachen (Umschalten der Videoköpfe auf Wiedergabe).

5 - DYNAMIC ADJUSTMENTS ON THE TAPE PATH:

For these dynamic adjustments:
- Remove the cassette holder.
- Playback the grey scale section on the alignment tape.
- Display on a dual-trace oscilloscope the FM video signal (BV131) synchronized by the 25 Hz flip-flop (BT002) (switching of the video heads in playback mode).

A - Feineinstellung der beweglichen Bandführungen:

(Abb. 23)

Die optimale Einstellung ist erreicht, wenn die FM-Hüllkurve von Spuranfang bis Spurende eine konstante Amplitude hat. Eine schlechte Einstellung der beweglichen Abrollbandführung zieht entweder ein Rasterflimmern oder einen Rauschbalken im oberen Teil des Bildes nach sich.
Gleichen Sie die bewegliche Abrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spuranfang vermieden wird. Eine schlechte Einstellung der beweglichen Aufrollbandführung zieht Rauschbalken im unteren Teil des Bildes nach sich.
Gleichen Sie die bewegliche Aufrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spurende vermieden wird.
Stellen Sie durch Betätigen der Spurlagenfunktion sicher, daß die Amplitude der FM-Hüllkurve von Spuranfang bis Spurende gleichmäßig abnimmt. Falls dies nicht der Fall ist, wiederholen Sie bitte den Abgleich.

A - Fine adjustment of the mobile tape guides:

(fig. 23)

The optimum adjustment is obtained when the amplitude of the FM envelope is constant from the beginning to the end of the track.
If the mobile supply tape guide is incorrectly set, either the frame jumps or there is a noise bar at the top of the screen.
Adjust the mobile supply tape guide to eliminate any constriction of the FM envelope at the beginning of the track.
If the mobile take-up tape guide is incorrectly set, there will be noise bars at the bottom of the screen.
Adjust the mobile take-up tape guide to eliminate any constriction of the FM envelope at the end of the track.
Check, using the tracking control, that the amplitude of the FM envelope decreases in a linear manner from the beginning to the end of the track. If there is pinching of the envelope on the supply or take-up side, re-adjust the corresponding tape guide.

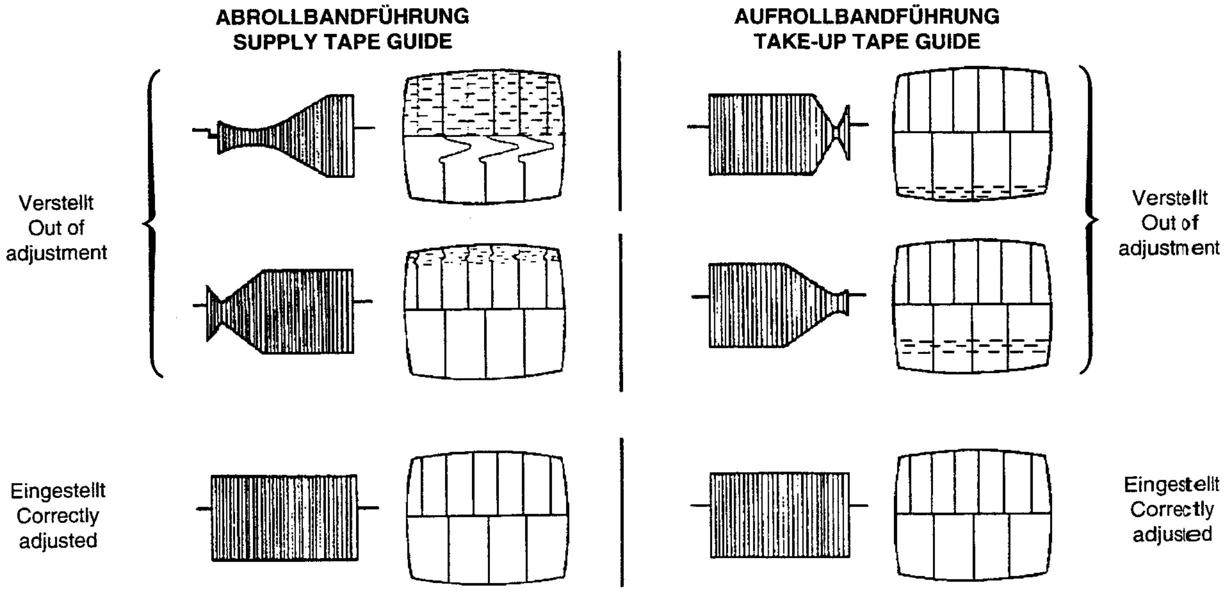


fig. 23

B - Feineinstellung des Ton- / Kontrollkopfes

(ABB. 24 und 25)

Die richtige Einstellung der Lage des Ton- / Kontrollkopfes ist notwendig, um ein korrektes Audio-Ausgangssignal und einen optimalen Rauschabstand zu garantieren.
Ein Abgleichfehler kann außerdem zu einer Instabilität in der Servo-Regelung führen. Besonders wichtig ist diese Einstellung bei Geräten mit Index Suchlauf.
Zur Beobachtung des Audio-Signals wird ein Oszilloskop an den Audio Ausgang angeschlossen.

- Testkassette mit Grautreppe und Audio-Signal (6kHz) abspielen.
- Die Azimut-Schraube (A) nachstellen, bis das Maximum des Audio-Signals am Ausgang erreicht ist.
- Die Höhe des Ton- /Kontrollkopfes mit der Mutter (H) so einstellen, daß das Audio-Signal eine flache Hüllkurve aufweist.
- Die Schrauben (A) und (H) abwechselnd und immer nur wenig (nicht mehr als 45° auf einmal) nachstellen, um einen maximalen Audio-Pegel am Ausgang zu erzielen.

B - Fine adjustment of the audio control head :

(fig. 24 and 25)

The position of the audio control head must be correctly set to ensure that the audio output and the signal /noise ratio are correct.
A misalignment may cause the servo circuits to be unstable. The precision of the adjustment is particularly important for models with index search.
To observe the audio signal, connect an oscilloscope to the AUDIO output.

- Playback the grey scale pattern on video cassette (Audio 6 kHz).
- Adjust the azimuth screw (A) to obtain the maximum output level.
- Adjust the height of the audio control head on the screw (H) so that the envelope of the audio signal is flat.
- Adjust the screws (A) and (H) in alteration and in small steps (45° at a time) to obtain the maximum output level.

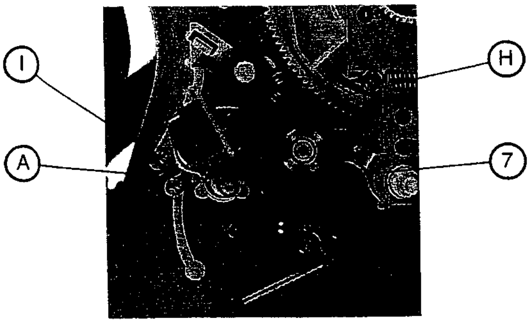


fig. 24

C - Kompatibilitätseinstellung *(Abb. 24)*

Zunächst muß der Videorecorder in sich kompatibel sein. Dazu ein Farbbalken-Testbild aufnehmen und überprüfen, ob die Wiedergabe dieser Aufnahme optimal ist.

- Den Tastkopf eines Oszilloskops an den FM-Ausgang (BV131) anschließen.
- Spurlagenfunktion aufrufen und durch Drücken der "+" und "-" Tasten die Spurlage auf Null stellen.
- Das Oszilloskop extern mit dem Kopftrommel-Schaltsignal (Drum Flip Flop) triggern. Die positive Flanke zum Triggern verwenden, um das Signal von Kopf 2 darzustellen.
- FM-Wert für die Grautreppe ablesen.
- Die Schraube (7) lösen.
- Den Ton- / Kontrollkopfes unter Beachtung des Signals auf den Videoköpfen mit einem Kreuzschraubenzieher, der in die Einkerbung gesetzt wird (ohne das Gehäuse zu durchqueren), drehen, um den FM-Pegel auf Maximum zu stellen. Die Schraube (7) sofort wieder anziehen.
- Durch Betätigung der Spurlage-Funktion überprüfen, ob das Maximum des FM-Pegels in der Nullstellung erreicht ist.

VI - ÜBERPRÜFUNG DES LAUFWERKS UND FEHLERSUCHE

1 - ÜBERPRÜFUNG VON MOTOR- UND SENSORSYSTEM

Motor- und Sensorsystem wie in dem Diagramm auf Seite 17 dargestellt auf Fehlfunktionen untersuchen.

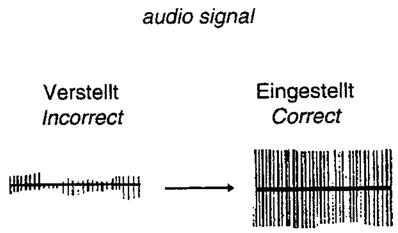


fig. 25

C - Compatibility adjustment *(fig. 24)*

First of all, the video recorder must be made compatible with itself, it is therefore, necessary to record a colour bar test pattern and check that the playback of this recording is optimum.

- Connect the probe of the oscilloscope envelope to the FM output (BV131).
- Enter the tracking mode and select manual tracking.
- Press on the + and - keys and set the track to 0.
- Synchronize the oscilloscope with the head switching flip-flop. Use the positive trigger to display the signal from head 2.
- Playback the grey scale pattern.
- Loosen the screw (7).
- While observing the signal on the video heads, tilt the audio control head,using a Philips screwdriver placed in the notch (so as not to pass through the chassis), in order to obtain the maximum output level. Tighten the screw (7) immeddiately
- Check by pressing the + and - phase keys that the signal is maximum for a track equal to 0.

VI - MECHANICAL DECK TROUBLE SHOOTING AND CHECK METHOD

1 - MOTOR SENSOR SYSTEM CHECK

Check whether any abnormalities are found in the motor or the sensor system as follows in the flow chart on page 17

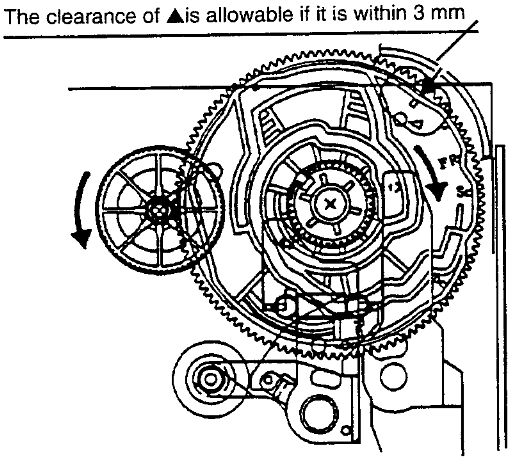
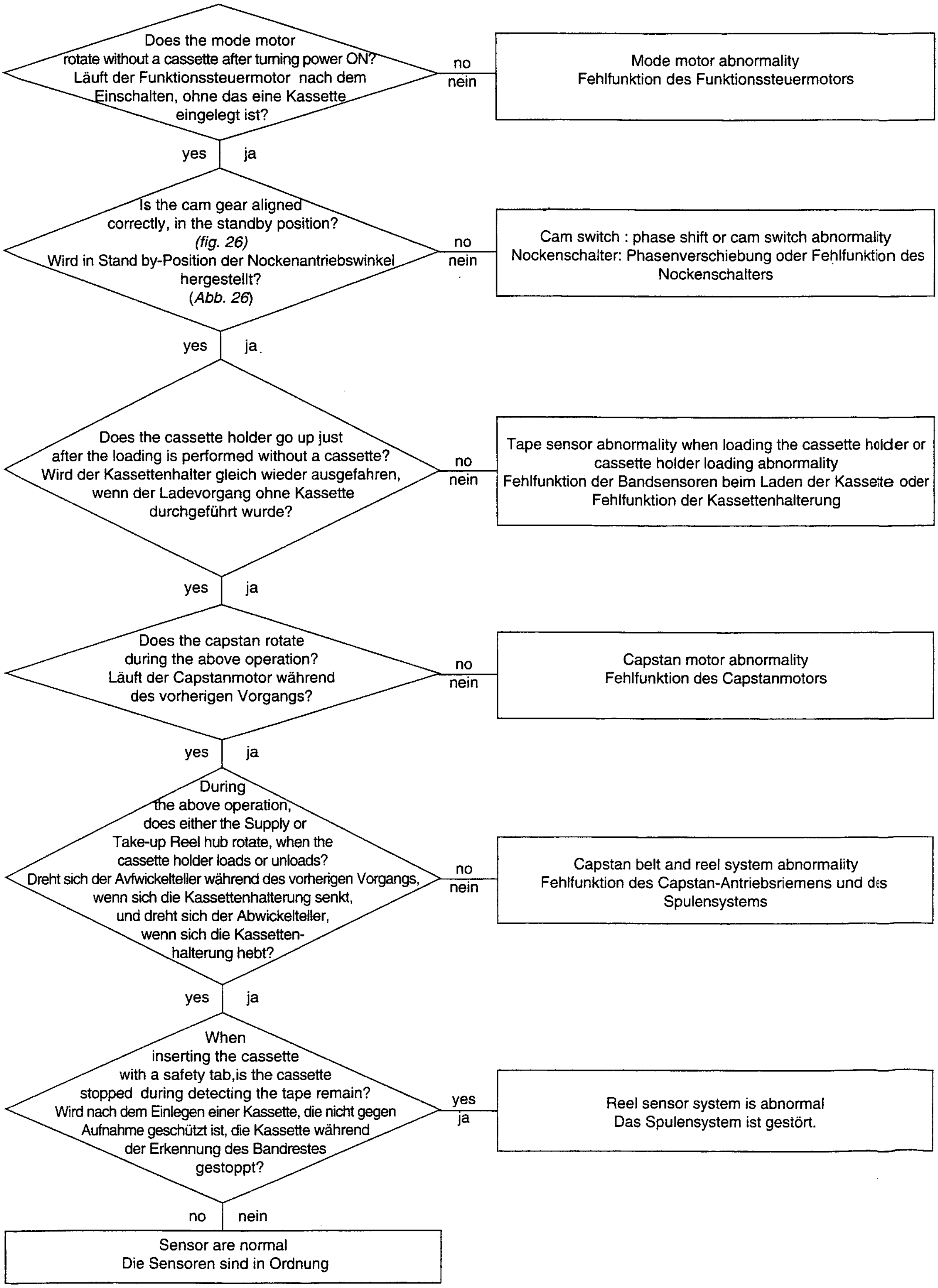

Der Abstand von ▲ ist zulässig, wenn er innerhalb von 3 mm liegt
The clearance of ▲is allowable if it is within 3 mm

fig. 26

2 - CHECKLISTE FÜR DIE FEHLERSUCHE

2 - TROUBLESHOOTING CHECKLIST

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
1	• Power doesn't turn on. Loading operation is defective. Mode shift operation is defective. • Das Gerät schaltet nicht ein. Fehlerhafter Ladevorgang. Fehlerhafter Umspringvorgang.	• Mechanism stops due to mechanical phase mismatch. • blockierung aufgrund von Phasenverschiebung in der Mechanik	• Check mode shift "cassette out FF/REW position can be performed when turning worm wheel. • Überprüfen, ob das Umspringen von FF auf REW möglich ist, wenn das Schneckenrad gedreht wird.
	• Loading operation is not performed • Ladevorgang erfolgt nicht	• Loading motor doesn't rotate.(loading motor is defective or circuit is defective) • Lademotor läuft nicht. (Lademotorfehler, Schaltkreisfehler)	• Check loading motor whether it turns by the outer power supply (12,5V) • Überprüfen, ob der Lademotor mit einem externen Netzteil läuft (12,5V)
	• Unloading operation is not performed • Entladevorgang erfolgt nicht	• S reel does'nt wind the tape • Der Abwickelteller spult nicht auf	• Refer to case 3 in this table. • Siehe Fall 3.
2	• Playback operation is not performed • Keine Wiedergabe	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in playback mode • Position der Mechanikteile überprüfen (Wiedergabe)
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Capstanmotor-, Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen
	• Playback picture doesn't appear. Video recording can't be performed • Das Wiedergabebild erscheint nicht. Videoaufzeichnung unmöglich	• In case of no mechanical problem: Drum is defective.(circuit is defective) • Falls kein Mechanikfehler vorliegt: Kopftrommelfehler.(Fehler im Schaltkreis)	• Check drum assembly • Kopftrommel überprüfen
3	• Playback interruption • Wiedergabe unterbrochen	• Reel rotation detection is defective. (sensor is defective, circuit is defective) • Fehler in der Spulendrehungserkennung. (Sensorfehler, Schaltkreisfehler)	• Check sensor output • Sensorenausgang überprüfen
	• Recording interruption • Aufzeichnung unterbrochen	• Idler doesn't swing • Zwischenrad ist blockiert.	• Check mechanical position as in Playback mode • Position der Mechanikteile (Wiedergabe) überprüfen
		• Reel belt is removed • Spulenantriebsriemen fehlt	• Check the reel belt is removed or no • Überprüfen, ob der Spulenantriebsriemen vorhanden is
4	• FF operation is not performed. FF operation is defective. REW operation is not performed. REW operation is defective. Others : REV/FF is not performed. Others : REV/FF is defective. • Band wird nicht vorgespult. Fehler beim schnellen Vorlauf. Band wird nicht zurückgespult. Fehler beim schnellen Rücklauf. Andere : kein REV/FF. Andere : kein REV/FF.	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch is not released • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle ist nicht gelöst	• Check mechanical position as in FF/REW mode • Position der Mechanikteile (FF/REW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Der Capstanmotor läuft nicht (Capstanmotorfehler oder Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen


Does the mode motor rotate without a cassette after turning power ON?
Läuft der Funktionssteuermotor nach dem Einschalten, ohne das eine Kassette eingelegt ist?
no
nein
Mode motor abnormality
Fehlfunktion des Funktionssteuermotors
yes
ja
Is the cam gear aligned correctly, in the standby position?
(fig. 26)
Wird in Stand by-Position der Nockenantriebswinkel hergestellt?
(Abb. 26)
no
nein
Cam switch : phase shift or cam switch abnormality
Nockenschalter: Phasenverschiebung oder Fehlfunktion des Nockenschalters
yes
ja
Does the cassette holder go up just after the loading is performed without a cassette?
Wird der Kassettenhalter gleich wieder ausgefahren, wenn der Ladevorgang ohne Kassette durchgeführt wurde?
no
nein
Tape sensor abnormality when loading the cassette holder or cassette holder loading abnormality
Fehlfunktion der Bandsensoren beim Laden der Kassette oder Fehlfunktion der Kassettenhalterung
yes
ja
Does the capstan rotate during the above operation?
Läuft der Capstanmotor während des vorherigen Vorgangs?
no
nein
Capstan motor abnormality
Fehlfunktion des Capstanmotors
yes
ja
During the above operation, does either the Supply or Take-up Reel hub rotate, when the cassette holder loads or unloads?
Dreht sich der Avfwickelteller während des vorherigen Vorgangs, wenn sich die Kassettenhalterung senkt, und dreht sich der Abwickelteller, wenn sich die Kassettenhalterung hebt?
no
nein
Capstan belt and reel system abnormality
Fehlfunktion des Capstan-Antriebsriemens und des Spulensystems
yes
ja
When inserting the cassette with a safety tab,is the cassette stopped during detecting the tape remain?
Wird nach dem Einlegen einer Kassette, die nicht gegen Aufnahme geschützt ist, die Kassette während der Erkennung des Bandrestes gestoppt?
yes
ja
Reel sensor system is abnormal
Das Spulensystem ist gestört.
no
nein
Sensor are normal
Die Sensoren sind in Ordnung

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
5	• REVIEW is not performed • Kein REVIEW	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in REVIEW mode • Position der Mechanikteile (REVIEW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Fehler im Capstanmotor oder im Schaltkreis)	• Check capstan motor • Capstanmotor überprüfen
6	• Slot-in is not performed Cassette can't be inserted • Kassette wird nicht eingezogen. Kassette kann nicht eingelegt werden	• When rod (24) is mounted on the mechanical deck, the position is not correct • Dreieck (24) nicht in der richtigen Stellung auf dem Laufwerk angebracht	• Check mechanical position shown in *(fig. 8)* • In *(Abb. 8)* gezeigte Position der Mechanikteile überprüfen
7	• Capstan servo doesn't work Capstan servo is uneven • Capstan-Servo funktioniert nicht Capstan-Servo ungleichmässig	• Capstan motor is defective • Fehler im Capstanmotor	• Check capstan motor • Capstanmotor überprüfen
	• Tape speed is abnormal FG pulse is not output • Bandgeschwindigkeit ist anormal Keine FG-Pulsausgabe	• Audio control head output is defective (circuit is defective) • Fehler am Ton-/Kontrollkopfausgang (Schaltkreisfehler)	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
8	• Audio output doesn't come out Audio output is small Audio output variation is large Audio output is uneven Audio distortion • Kein Ton Ton leise Starke Tonausgabeschwankung unregelmässige Tonausgabe Tonverzerrung	• Audio control head is defective • Fehler im Ton-/Kontrollkopf	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
		• Tape transport adjustment • Bandantriebseinstellung	• Perform tape transport adjustment again after confirming tape transport condition. • Bandantrieb nach Feststellung des Bandantriebszustands überprüfen
	• Audio noise Others : Audio is defective • Rauschen Andere: fehlerhafte Tonausgabe	• Hi-fi head (drum) is defective (circuit is defective) • Fehler im Hi-fi-Kopf (Trommel) (Schaltkreisfehler)	• Check drum. Check whether B+14V is supplied • Trommel überprüfen. Überprüfen, ob B+14V gespeist werden.

Wird bei den oben beschriebenen Abläufen ein Fehler in der Mechanik festgestellt, muß folgendermaßen vorgegangen werden:
- Demontage, mechanische Phasenverschiebung: reparieren
- Teilefehler, Teileschaden: Teile auswechseln

Sollte die Mechanik keine Fehler aufweisen, Schaltkreise überprüfen.

If the mechanism is found out to be defective according to the procedures described above, perform the following :

- Disassembly, mechanical phase mismatch : repair correctly
- Part defect, part damage : replace parts

If the mechanisml is found not to be defective, check the circuits.

Abbreviation list :

FF	Fast Forward
FG	Frequency Generator
REV/FF	Review
REW	Rewind
SU	Supply
TU	Take-up
UN-LO	Unload

THOMSON MULTI MEDIA

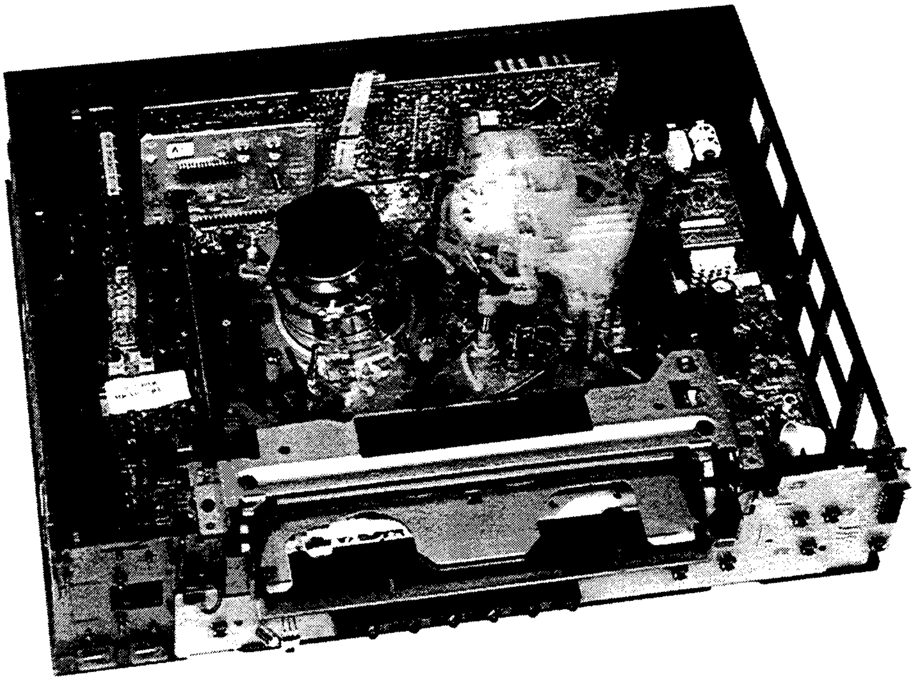
Brandt FERGUSON SABA **TELEFUNKEN** **THOMSON**

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R/T 7000

Addition to SM | 350 613 40
Additif au SM
Ergänzung zum SM
Aggiornamento del SM
Suplemento al SM



⚠

WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

⚠ Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu' ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen!
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare le piastre quando sono alimentate!
Per le riparazioni sulla sezione alimentatore, utilizzare un trasformatore isolatore.

No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione dei componenti di sicurezza (evidenziati con il segno ⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La sustitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER :
On UHF,input level : 1 mV, bar test pattern :
- PAL, I standard, 100% white.

Via the scart socket, input level : 1 Vpp, bar test pattern :

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR :
En UHF, niveau d'entrée 1 mV mire de barres
- SECAM, Norm L, Blanc 100%.

Par la prise Péritélévision, niveau d'entrée 1 Vcc, mire de barres .

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER :
Bei UHF Eingangspegel 1 mV, Farbbalken :
- PAL, Norm G, Weiss 100%.

Über die Scartbuchse : Eingangspegel 1 Vss, Farbbalken :

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.

Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

RICEVITORE :
In UHF, livello d'entrata 1 mV, monoscopio barre :
- PAL, norma G. bianco 100%.

Via SCART, livello d'entrata 1 Vpp, monoscopio barre :

Colore, Contrasto, Luminositá media, Suono minimo.
Programma selezionato PR 01.

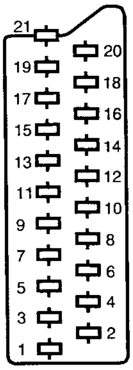
Tensioni continue rilevate rispetto alla massa con un voltmetro digitale.

RECEPTOR :
En UHF, nivel de entrada 1 mV, mira de barras :
- PAL, norma G, blanco 100%.

Por la toma Peritelevision, nivel de entrada 1 Vpp mira de barra.

Color, Contraste, luz a mitad de carrera, Sonido minimo.
Programa afectado PR 01.

Tensiones continuas marcadas en relacion a la masa con un voltimetro digital.



NOTE : (MAIN)... *etc. identifies each* pcb module.

NOTE : (MAIN)... *etc. repères des platines constituant l'appareil.*

HINWEIS : (MAIN)... *usw. Kennzeichnung der Platinen, aus denen das Gerät zusammengesetzt ist.*

NOTA : (MAIN)... *ecc. sigla delle piastre dell' apparecchio.*

NOTA : (MAIN)... *etc. marcas de las placas que constituyen el aparato.*

		ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO	ESPAÑOL
1	⊙→	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
2	→⊙	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
3	⊙→	AUDIO "L"	AUDIO "G"	AUDIO "L"	AUDIO "S"	AUDIO "I"
4	⊥	AUDIO	AUDIO	AUDIO	AUDIO	AUDIO
5	⊥	"BLUE"	"BLEU"	"BLAU"	"BLU"	"AZUL"
6	→⊙	AUDIO "L" MONO	AUDIO "G" MONO	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "I" MONO
7	→⊙	"BLUE"	"BLEU"	"BLAU"	BLU	AZUL
8	→⊙	SLOW SWITCH	COMMUT. LENTE	AV UMSCHALTUNG	"COMMUTAZIONE LENTA"	"CONMUTACION LENTA"
9	⊥	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
10	NC					
11	→⊙	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
12	NC					
13	⊥	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
14	NC					
15	→⊙	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
16	→⊙	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
17	⊥	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
18	⊥	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
19	⊙→	VIDEO	.VIDEO	VIDEO	VIDEO	VIDEO
20	→⊙	VIDEO OR "SYNC"	VIDEO SYNCHRO	VIDEO ODER SYNCHRO	VIDEO O SINCRO	VIDEO O SINCRO
21	⊙→	PLUG SCREEN BOX	BLINDAGE PRISE	ABSCHIRMUNG DES STECKERS	INVOLUCRO METAL-LICO DELLA PRESA	BLINDAJE DEL ENCHUFE

→⊙ : INPUT - ENTRÉE - EINGANG - ENTRATA - ENTRADA • ⊙→ : OUTPUT - SORTIE - AUSGANG - USCITA - SALIDA • ⊥ : EARTH - MASSE - MASSE - MASSA - MASA

Abbreviations - Abreviations - Abkürzungen - Abbreviazioni - Abreviaciones

AC	Alternating Current
ACC	Automatic Colour Control
ACK	Automatic Colour Killer
AD.REF	Analog/Digital Converter Reference
AE	Audio Erase
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
A_IF	Audio IF
ALC	Automatic Level Control
AMP	Amplifier
APC	Automatic Phase Control
AP.CONT	Aperture Control
AV	Audio-Video
A/V SWP	Audio/Video Switching Point (DRUM FF)
B.EMPH	Burst Emphasis
B.DEEMPH	Burst Deemphasis
BG	Burst Gate
BID	Burst Identification
BLK	Blanking
BPF	Band Pass Filter
CAP	Capstan
CBC	Cable Box Control (Satellite Control)
CCD	Charge Coupled Device
CH	Channel
CFG	Capstan Frequency Generator
CLK	Clock
COMP	Comparator
CONV	Converter
CPWM	Capstan Pulse Width Modulation
C-REG	Capstan Regulation
CR	Color Rotary
CS	Chip Select
CSYNC	Composite Synch
CTL	Control
DC	Direct Current
D.LIM	Double Limitter
DEEMPH	Deemphasis
DET	Detector
D-FG	Drum Frequency Generator
DFF	Drum Flip Flop
DIF.EQ	Differential Equalizer
DIG	Digital
DLY	Delay
DOC	Drop Out Compensation
E-E	Electronic-Electronic
EMPH	Emphasis
ENV	Envelope
EP	Extended Play
EQ	Equalizer
F.E	Full Erase
F.REW	Fast Rewind
F.FWD	Fast Forward
F/R	Forward/Rewind
FCB	Front Connection Board
FF	Fast Forward
FG	Frequency Generator
FMCI	FM Carrier Interleave
FWD	Forward
GND	Ground
GCA	Gain Controlled Amplifier
HASEL	Head Amplifier Select
HAB	Head Amplifier Board
HD	Horizontal Synch Pulse
HPF	High Pass Filter
I.R	Infra Red
ID	Identification
INP/IN	Input
KDB	Key Display Board
LIM	Limitter
LP	Long Play
LPF	Low Pass Filter
MESECAM	Middle East Secam
NC	Noise Canceller
OSD	On Screen Display
PB	Play Back
PB_C	Play Back Chroma
PCB	Printed Circuit Board
PDC	Program Delivery Control
PG	Pulse Generator
PH	Pseudo Horizontal Synch
PIF	Picture IF
PLL	Phase Locked Loop
PS	Phase Switch
PV	Pseudo Vertical Synch
PWM	Pulse Width Modulation
REC	Record
REC_C	Record Chroma
REW	Rewind
REV	Reverse
SCL	Serial Clock
SDA	Serial Data
SEC	SECAM
SU REEL	Supply Reel
SMPS	Switch Mode Power Supply
SP	Standard Play
SS	Synch Separator
SW	Switch
TU REEL	Take Up Reel
TMB	Terminal Board
VAL	Components without value and not on the PCB
VCA	Voltage Controlled Amplifier
VCO	Voltage Controlled Oscillator
VCR	Video Cassette Recorder
VD	Supply Voltage Digital
VE	Voltage (Ever)
V_ENV	Video Envelope
V_IF	Video IF
VS	Voltage (Switched)
VM	Motor Voltage (Drum & Loading motor)
VMC	Motor Voltage (Capstan motor)
VPS	Video Program System
W/D	White/Dark
Y/C	Luminance/Chrominance

S.

TECHNICAL DATA AND COMPOSITION OF VIDEO RECORDERS
CARACTERISTIQUES TECHNIQUES ET COMPOSITION DES MAGNETOSCOPES
TECHNISCHE DATEN UND ZUSAMMENSETZUNG VIDEORECORDERS
CARATTERISTICHE TECNICHE DEI VIDEOREGISTRATORI
CARACTERISTICAS TÉCNICAS Y COMPOSICIÓN DE LOS VÍDEOS

Power requirement: 220 - 240 V ± 10%
Alimentation: 50/60Hz
Netzeil:
Alimentazione:
Alimentación:

Programming: **SHOWVIEW**
Programmation:
Timer:
Programmazione:
Programación:

Tape speed: SP
Vitesse de défilement: SP/LP *
Bandgeschwindigkeit: SP/LP/SLP **
Velocitá del nastro:
Velocidad de la cinta:

4 Heads Helical Scan system:
4 têtes video:
4 Video-Köpfe: * / **
4 Testine video
4 Cabezas video:

2 Heads Helical Scan system:
2 têtes video:
2 Video-Köpfe:
2 Testine video
2 Cabezas video:

Tape format: VHS
Format video:
Video-system:
Formato video:
Formato vídeo:

Consumption 22 W
Consommation: 3 W (ECO)
Leitstungsaufnahme
Consumo:
Consumo:

Sound: HiFi Stereo
Son:
Ton:
Suono:
Sonido:

Power save: 30 min..
Sécurité secteur:
Gangreserve:
Riserva alimentazione:
Seguridad red:

SP = 23,39 mm/sec.

LP = 11,70 mm/sec.

SLP = 33,35 mm/sec. (Only NTSC PB)

For service information on the deck mechanism see separate publication "R4000 SERIES MECHANICAL ADJUSTMENTS" and "R4000 DRUM DISASSEMBLY / ASSEMBLY SERVICE MANUAL".

Pour toute intervention ou réglage sur la partie mécanique, se reporter au FASCICULE MECANIQUE R4000 ainsi qu'à son additif: "DEMONTAGE DU TAMBOUR SUR LES MAGNETOSCOPES EQUIPES DU CHASSIS R4000".

Informationen über mechanische Einstellungen entnehmen Sie bitte dem Handbuch "MECHANISCHE EINSTELLUNGEN R4000"

Ulteriori informazioni sulla meccanica si possono trovare nelle seguenti pubblicazioni: "SERIE R4000 REGOLAZIONI MECCANICHE" e R4000 MANUALE DI SERVIZIO PER IL DISASSEMBLAGGIO DEL TAMBURO".

Para información de servicio técnico sobre el mecanismo de la platina, consulte la documentación separada "AJUSTES MECANICOS SERIES R4000" y "MANUAL DE SERVICIO ENSAMBLAJE DEL TAMBOR R4000"

SCHEMATIC DIAGRAMS & PCBs

Reference	Number of Setup	Interconnexions diagrams	Main PCB	Pow/TU/IF	Main Servo	Main Video	Audio scart	Secam	Feature Board	HPB	KDB/FCB	JSB
THOMSON												
VPH6650E	**01109E0480119B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	35-38	-
VPH6800G**	**1A229E02B1B1B3**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	43-46	-
VPH6810F**	**01109E0080119B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	21-24	-
VPH6810G**	**1A229E02B1B193**	12-14	51-56	15-20	75-82	71-74	14-20	57-60	-	-	33-36	-
VPH6850U**	**29119E60B991B3**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	21-24	49
VPH6880**	**THOMSON**	12-14	51-56	15-20	75-82	29-34	14-20	57-60	21-26	27	33-36	49
VPH6920F**	**01109E40B0919B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	57-58	-
VPH6920G**	**1A229E02B1B193**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	53-54	-
VPH6950F**	**02209E42B0A3B3**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	53-54	49
VPH6950G**	**1A229E42B1A3B3**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	53-54	49
VPH6950U**	**29219E62B9B3F7**	12-14	51-56	15-20	75-82	29-34	14-20	-	-	-	53-54	49
VPH6980**	**02409E62B0B3F7**	12-14	51-56	15-20	75-82	29-34	14-20	57-60	-	-	47-52	-
VPH6990**	**THOMSON**	12-14	51-56	15-20	75-82	29-34	14-20	57-60	21-26	27	47-52	-

SCHEMATIC DIAGRAMS & PCBs

Reference	Number of Setup	Interconnexions diagrams	Main PCB	Pow/TU/IF	Main Servo	Main Video	Audio scart	Secam	Feature Board	HPB	KDB/FCB	JSB
TELEFUNKEN												
M9850G**	**1A229E02B1B1B3**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	37-40	-
M9860SA**	**29119E60B991B3**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	45-48	49
M9885**	**TELEFUNKEN**	12-14	51-56	15-20	75-82	71-74	14-20	57-60	21-26	27	37-40	49
FERGUSON												
FV307HV**	**FERGUSON**	12-14	51-56	15-20	75-82	29-34	14-20	-	21-26	-	43-46	49
FV405HV**	**29119E00B99193**	12-14	51-56	15-20	75-82	71-74	14-20	-	-	-	59-60	-
FV407HV	**29219E62B9A3B3**	12-14	51-56	15-20	75-82	29-34	14-20	-	-	-	55-56	49
BRANDT												
VK840PS**	**01009E0440109B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	39-42	-
VK850PS**	**01009E0040109B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	29-32	-
VK851PS**	**01109E0040119B**	12-14	51-56	15-20	75-82	61-70	14-20	57-60	-	-	29-32	-
SABA												
EV610**	**1A229E02B1B1B3**	12-14	51-56	15-20	75-82	74-74	14-20	-	-	-	55-56	49

(GB) For pages not highlighted in the table please refer to Service Manual 350 613 40.

(F) Pour les pages non tramées, veuillez vous reportez à la documentation de base 350 613 40.

(D) Seitenzahlen, die in der Tabelle nicht grau hinterlegt sind, beziehen sich auf das Service-Manual 350 613 40.

(I) Per gli argomenti non trattati in questo aggiornamento, fare riferimento al manuale di servizio relativo al telaio R7000 : 350 61340.

(E) Para las páginas no sombreadas, ver la documentación básica 350 613 40.

GB 1. MAINTENANCE INSTRUCTIONS

1.1 Service mode adjustments

1.1.1 KDB board service mode

Accessing service mode

a) Disconnect the video recorder from the mains supply.

b) Hold down the "+" and "-" keys on the front panel and reconnect the video recorder to the mains supply (For video recorders which do not have these keys, use "STOP" and "PLAY" keys instead). Release the "+" and "-" keys.

c) Dispayed by the On Screen Display (OSD), will be a 14-digit number, which represents the VCRs current configuration.
Use the numeric keys on the RCU to increase each value from 0 to F, apart from key 2 which is used to go to the next digit.
Each VCR has its own Set-up value - these values are listed in the summary table.

d) To save the new values, press STOP key. After saving, the switching point and 16 MHz clock settings must be re-aligned. The Service counter will also be reset to zero.
The FAST FORWARD key (>>) is used to go to the next pages in the service mode. These pages introduce the Service Counter and Self Diagnosis functions (only for UK models).
To leave service mode, press the EXIT (E) key on the RCU.

1.1.2 Operating time

The operating time is given in hours by the Service counter

1.1.3 Self Diagnosis (UK models only)

When a mechanical problem or operating error occurs, a 10-digits number representing the malfunction is stored in the EEPROM. This number will be displayed on the TV screen when the VCR is switched "ON", analysis of this number will assist in finding a solution to the problem encountered.

Displaying error messages

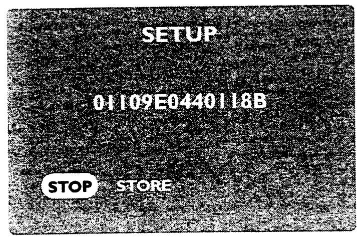
To acces the error message, either:

a) Press the fast foward key (>>) on the RCU, whilst in the SERVICE SETUP mode, or

b) Press and **hold** the "ERASE" key for 10 seconds, if there is no display on the television screen and the VCR is in the **STOP or STANDBY mode**

Interpreting error messages

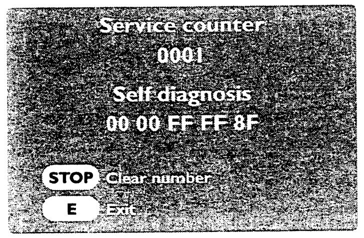
The meaning of the various error message codes are given in the table below.



SETUP

01109E0440118B

STOP STORE



Service counter

0001

Self diagnosis

00 00 FF FF 8F

STOP Clear number

E Exit

NUMBER OF DIGIT	1 & 2	3 & 4	5,6,7 & 8	9 & 10
MEANING	Target mechadeck and current mechadeck positions	Task servo is performing	Task active prior to abnormal off	Abnormal flags
VALUE	1 - Wind 2 - Stop 3 - Standby 3 - Play 4 - Rev 5 - Loading/Unloading 6 - Off 7 - Eject. F - Initial	00 - Stop 01 - FRew 02 - FF 04 - Play 11 - Rev 12 - Cue 44 - Record 84 - Still C4 - Rec Pause 40 - Rec/Rec P 10 - Search mode	0 0 0 0 - Normal 0 0 0 1 - Record 0 0 0 4 - Step 0 0 0 8 - Off 0 0 1 0 - Eject. 0 0 2 0 - Stop 0 0 4 0 - Capbrake 0 0 8 0 - Initial 0 2 0 0 - Endless Record 0 4 0 0 - Endless Play 0 8 0 0 - Continuous 1 0 0 0 - Wind 2 0 0 0 - Search 4 0 0 0 - Still 8 0 0 0 - Play	81 - Drum 82 - Left Reel 84 - Right Reel 88 - Task incomplete

1.2 Head switching point

a) Insert a protected test cassette in the video recorder. The VCR will automatically enter the play mode. When "PLAY E----" is displayed, press the STATUS key on the RCU.

b) Next simultaneously press the "+" , "-" and "PLAY" keys on the front panel of the VCR (or STOP, STBy and PLAY for models which do not have the "+" and "-" keys).

c) "ADJ" will appears in the display, after a few seconds, stop the adjustment procedure by pressing the PLAY key on the front panel of the VCR. (See section 2.3.6 Electrical settings).

1.3 Adjusting the 16-MHz clock

a) To compensate for 16 MHz quartz's tolerances an error compensation signal is saved in the EEPROM. This error signal is measured by comparing the 16 MHz clock frequency with the frequency of the Video Sync. Signal.
Connect an aerial to the tuner input and select a PAL/Secam channel with a 50 Hz signal (frame frequency).
Check that there is not a cassette in the video recorder.

b) Press the "+", "-" and "PLAY" keys (or STOP, STBY and PLAY for certain models which do not have the "+" and "-" keys). "ADJ" will appear in the display and adjustment mode will start. Wait 30 seconds (for computing and saving in EEPROM).

c) To stop the process and save the information in the EEPROM, insert a cassette and press the "EJECT" key.

Important note:

This adjustment is saved in EEPROM IT004 - if this is replaced, the Set-up value corresponding to the commercial model number must be re-entered, and both the video heads switching points and the 16-MHz clock re-adjusted.

1.4 Disassembly

1.4.1 Main/mechanical board assembly

a) Remove the two screw from the mechadeck.

b) Disengage the 2 securing clips holding the main board in place.

c) Lift the cassette holder up to release the mechadeck assembly and the main board.

1.4.2 Cassette holder

Before carrying out this procedure, perform step 1.4.1.

a) Remove the upper part of the cassette holder by removing the 2 securing screws.

b) Place the cassette holder in a raised position.

c) Raise the cassette holder slightly on the drum side.

d) Release the white levers (on the left and right of the cassette holder), and push the cassette holder towards the drum until the rear guide pins come out of the side guide rails.

e) Now pull the cassette holder in the opposite direction until the guiding pins (front side) also come out of the side guide rails.

1.4.3 Separating the main board from mechanical board

Before carrying out this procedure, perform step 1.4.1.

a) Disconnect flat wire connectors BT002 (function control motor), BV001 (drum), BN002/BN004 (HIFI) and BS031 (ACE head).

b) Turn the assembly over and remove the PCB securing screw marked with a white arrow.

c) Remove the Capstan drive belt.

d) Release the 4 plastic securing clips and remove the main printed circuit board.

F 1. INSTRUCTION DE MAINTENANCES

1.1 Réglages du mode service

1.1.1 Mode service platine KDB.

Accès au mode service:

a) Déconnecter le magnétoscope du secteur.

b) Maintenir appuyer les touches «+» et «-» puis connecter le magnétoscope au secteur. (Pour ceux ne disposant pas de ces touches, utiliser «STOP» et «PLAY»). Relâcher les touches «+» et «-».

c) Sur l'écran (OSD), une série de 14 digits s'affichent, représentant la configuration présente.
Utiliser les touches numérique de la télécommande pour incrémenter chaque valeurs de 0 à F sauf la touche 2 qui permet de passer au digit suivant.
Chaque appareils a sa propre valeur de Setup, ces valeurs sont répertoriées dans le sommaire.

d) Pour mémoriser les nouvelles valeurs, appuyer sur STOP. Après mémorisation, il est nécessaire de reprendre les réglages des points de commutation et de l'horloge 16MHz, le compteur du temps de fonctionnement (Service counter) est remis à zéro.
La touche AVANCE RAPIDE (>>) est utilisée pour accéder aux pages suivantes du mode Service. Ces pages introduisent les fonctions «Service Counter» et «Auto diagnostique» **(seulement pour les modèles UK).**

Pour sortir du mode service presser la touche EXIT(E) de la télécommande.

1.1.2 Temps de fonctionnement.

Ce temps est donné en heure par l'information "Service counter".

1.1.3 Auto diagnostique (modèles UK seulement)

Lorsqu'il se produit un incident mécanique où suite à une erreur de manipulation, un nombre de 10 chiffres représentant ce mauvais fonctionnement est mémorisé dans l'EEPROM.
L'affichage à l'écran de ce nombre peut permettre, par son analyse, de résoudre le problème rencontré.

Affichage du message d'erreur

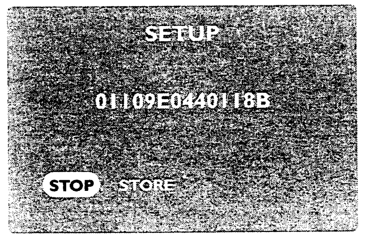
Accès au message d'erreur :

a) Lorsque la page «SERVICE SETUP» est affiché à l'écran, appuyer sur la touche avance rapide «>>» de la télécommande.

b) En **mode STOP ou STANDBY**, lorsqu'il n'y a aucun affichage sur l'écran du téléviseur, appuyer sur la touche ERASE pendant 10 secondes.

Interprétation du message d'erreur

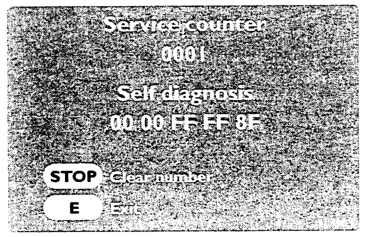
La signification des différents chiffres composant le message d'erreur est donnée dans le tableau ci-dessous.



SETUP

01109E0440118B

STOP STORE



Service counter

0001

Self diagnosis

00 00 FF FF 8F

STOP Clear number

E Exit

NUMERO DU DIGIT	1 & 2	3 & 4	5,6,7 & 8	9 & 10
SIGNIFICATION	Fonction demandée et position de la mécanique au moment de l'incident	Fonction réalisée par le µP (Gestion / Asserv.)	Fonction en cours avant anomalie	Indication de l'anomalie
VALEUR	1 - Av. ou Ret. rapide 2 - Stop 3 - Standby 3 - Lect. 4 - Lect. Ar. 5 - Charg ./ Décharg. 6 - Arrêt (en butée déchargé) 7 - Eject. F - Initialisation	00 - Stop 01 - Retour rapide 02 - Avance rapide 04 - Lect. 11 - Lect Ar. 12 - Rech. / Lect. 44 - Enreg. 84 - Arrêt sur image C4 - Pause Enreg. 40 - Enreg./Pause Enreg. 10 - Recherche	0 0 0 0 - Normal 0 0 0 1 - Enreg. 0 0 0 4 - Image / image 0 0 0 8 - Arrêt (en butée déchargé) 0 0 1 0 - Eject. 0 0 2 0 - Stop 0 0 4 0 - Frein de cabestan 0 0 8 0 - Initialisation 0 2 0 0 - Enreg. en boucle 0 4 0 0 - Lect. en boucle 0 8 0 0 - Enreg. ou Lect. en boucle 1 0 0 0 - Av. ou Rect. rapide 2 0 0 0 - Recherche 4 0 0 0 - Arrêt sur image 8 0 0 0 - Lect.	81 - Tambour 82 - Porte bobine gauche 84 - Porte bobine droit 88 - Fonction incomplète

1.2 Point de commutation des têtes.

Introduire une cassette test protégée dans le magnétoscope. Celui ci passe automatiquement en mode lecture. Lorsque l'affichage indique «PLAY» presser la touche «STATUS» de la télécommande. Appuyer ensuite, simultanément, sur les touches «+»,«-» et «PLAY» de la façade (ou STOP, STBY et PLAY pour certains modèles ne possédant pas les touches «+» et «-»). l'affichage indique "ADJ". Le magnétoscope va rester en mode lecture. Après quelques secondes, arrêter le réglage en pressant sur la touche «PLAY» . (Voir § 2.3.6 des réglages électriques)

1.3 Ajustement de l'horloge de 16 MHz

Connecter l'antenne à l'entrée du tuner et ajuster sur un canal PAL/Secam avec un signal de 50 Hz (fréquence trame). Vérifier qu'aucune cassette n'est introduite dans le magnétoscope. Presser les touches « + », « - » et « PLAY » (ou STOP, STBY et PLAY pour certains modèles ne possédant pas les touches «+» et «-»). "-ADJ" apparaît à l'écran, le réglage est activé. Attendre 30 secondes (pour calculer et mémoriser dans l'EEPROM). Insérer une cassette pour arrêter le processus et éjecter la cassette.

Note importante :

Ces réglages sont mémorisées dans l'EEPROM IT004, après changement de celle-ci, il est nécessaire de rentrer la valeur de Setup correspondante à la référence commercial, de régler les points de commutation des têtes vidéo, et l'horloge 16MHz.

1.4 Démontage

1.4.1 Ensemble platine principale et mécanique

a) Enlever la vis de fixation du blindage inférieur.

b) Enlever la façade et débrancher les connecteurs de la platine de commandes.

c) Enlever les 2 vis de la platine mécanique.

d) Libérer les 2 clips qui maintiennent la platine principale

e) Tirer le porte-cassette vers le haut pour dégager l'ensemble mécanique avec la platine principale.

1.4.2 Porte-cassette

Avant d'effectuer cette opération, exécuter l'étape 1.4.1 .

a) Enlever la partie supérieure du porte-cassette en ôtant les 2 vis.

b) Mettre le porte-cassette en position haute.

c) Lever légèrement le porte-cassette du côté du tambour.

d) Libérer les leviers blancs (à gauche et à droite du porte-cassette) et pousser celui-ci vers le tambour jusqu'à ce que les ergots (côté arrière) sortent des rails de guidage.

e) Tirer maintenant le porte-cassette dans la direction opposée jusqu'à ce que les ergots (côté avant) sortent également des rails.

1.4.3 Séparation de la platine principale de la platine mécanique

Avant d'effectuer cette opération, exécuter l'étape 1.4.1.

a) Débrancher les connecteurs BT002 (moteur de contrôle fonctions), BV001 (tambour), BN002/BN004 (HIFI) et BS031 (tête A/A)

b) Enlever la vis marquée d'une flèche du côté cuivre de la platine principale.

c) Enlever la courroie cabestan.

d) Libérer les 4 clips et retirer la platine principale.

Ⓓ 1. SERVICE - ANLEITUNG

1.1 Einstellungen im Service - Mode

1.1.1 Service - Mode KDB Platine

Zugang zum Betriebsmodus:

a) Den Videorecorder vom Netz trennen.

b) Die Tasten « + » und « - » gedrückt halten, Videorecorder ans Netz anschließen.(Wenn diese Tasten nicht vorhanden sind, «STOP» und « PLAY » drücken.) Die Tasten « + » und « - » loslassen.

c) Auf dem Schirm (OSD) erscheint eine 14 - Stellige Zahl, die aktuelle Konfiguration anzeige.
Mit den Zifferntasten der Fernbedienung die Werte von 0 bis F erhöhen, außer der Taste 2, die zum Weitergehen auf die nächste Stelle dient.
Jedes Gerät hat seinen eigenen Setup, diese Werte sind im Inhaltzverzeichnis angegeben.

d) Um neue Werte abzuspeichern, STOP drücken. Nach dem Abspeichern muß die Einstellung der Umschaltpunkte und der Clockfrequenz 16MHz neu vorgenommen werden. Der Betriebsstundenzähler wird auf 0 zurückgesetzt (service counter).
Die Taste SCHNELLVORLAUF (>>) dient zum Weiterschalten auf die nächsten Seiten des Servicemodus. Diese Seiten enthalten die Funktionen «Service Counter» und « Autodiagnose » **(nur für Modelle UK).** Um den Servicemodus zu verlassen, die Taste EXIT (E) auf der Fernbedienung drücken.

1.1.2 Betriebs

Diese Information wird in Stunden durch den « Service Counter » angegeben.

1.1.3 Autodiagnose (nur Modelle UK)

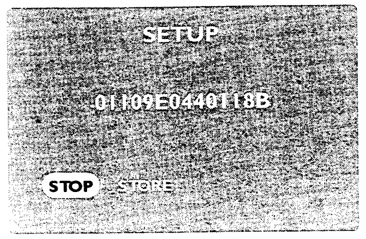
Bei einer mechanischen Störung oder infolge eines Bedienfehlers wird eine 10-stellige Zahl, die die Fehlfunktion darstellt, im EEPROM abgespeichert.
Die Anzeige und Analyse dieser Zahl auf dem Schirm kann zur Lösung eines Problems beitragen.

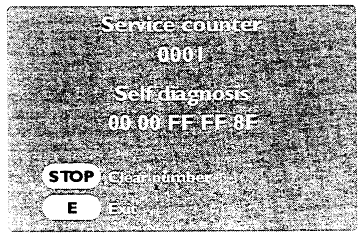
Einblenden der Fehlermeldung

Zugang zur Fehlermeldung:
a) Wenn die Seite « SERVICE SETUP » auf dem Schirm eingeblendet ist, die Schnellvorlauftaste « >> » auf der Fernbedienung drücken.
b) Im **STOP oder STANDBY – Modus**, wenn keine Information auf dem Bildschirm eingeblendet ist, die ERASE-Taste 10 Sekunden lang drücken.

Bedeutung der Fehlermeldung

Die Bedeutung der verschiedenen Ziffern der Fehlermeldung wird in der nachstehenden Tabelle erläutert.


SETUP
01109E0440118B
STOP STORE


Service counter
0001
Self diagnosis
00 00 FF FF 8F
STOP Clear number
E Exit

ZIFFER	1 & 2	3 & 4	5,6,7 & 8	9 & 10
BEDEUTUNG	Zielposition und tatsächliche position der Laufwerkmechani	Ausgeführte Servo-Funktion	Funktion vor außergewöhnlichem Ausschalten	Außergewöhnliche Indikatoren
WERT	1 - Spulen 2 - Stop 3 - Standby 3 - Widergabe 4 - Reviev 5 - Laden/Entladen 6 - Aus 7 - Answurf F - Initiallauf	00 - Stop 01 - Schneller Rücklauf 02 - Schneller Vorlauf 04 - Witedergabe 11 - Reviev 12 - Cue 44 - Aufnahme 84 - Standbild C4 - Aufnahmepause 40 - Aufn.//Aufn.pause 10 - Suchlauf	0 0 0 0 - Normal 0 0 0 1 - Aufnahme 0 0 0 4 - Schritt 0 0 0 8 - Aus 0 0 1 0 - Auswurf 0 0 2 0 - Stop 0 0 4 0 - Capbrake 0 0 8 0 - Initiallauf 0 2 0 0 - Endlosaufnahme 0 4 0 0 - Endloswierdergabe 0 8 0 0 - Fortlaufend 1 0 0 0 - Spulen 2 0 0 0 - Suchlauf 4 0 0 0 - Standbild 8 0 0 0 - Witedergabe	81 - Kopftrommel 82 - Linke Spuleteller 84 - Rechte Spuleteller 88 - Funktion nicht beendet

1.2 Umschaltpunkt für die Videoköpfe

Eine geschützte Testkassette in den Videorecorder einlegen. Dieser schaltet automatisch auf Wiedergabe. Wenn « PLAY » angezeigt wird, die Taste « STATUS » auf der Fernbedienung drücken. Anschliebend gleichzeitig die Tasten « + », « - » und dann PLAY auf dem Nah bedienfeld (oder STOP, STBY und PLAY für Modelle ohne die vorgenannten Tasten) drücken. « ADJ » wird eingeblendet.
Der Videorekorder bleibt in Wiedergabe. Nach einigen Sekunden die Einstellung durch Drücken der Taste « PLAY » auf dem Nah bedienfeld beenden. (Siehe § 2.3.6 der elektrischen Einstellungen)

1.3 Einstellen der Uhrzeit 16 MHz

Um die Abweichung des 16 MHz Quartzes auszugleichen, ist eine entsprechende Information im EEPROM abgespeichert. Der Abgleich erfolgt durch den Vergleich der Frequenz der 16 MHz Uhr mit der Frequenz des Video Sync. Signals. Der Abgleichwert wird in EEPROM abgespeichert.
Die Antenne am Tunereingang anschließen und auf einen PAL/SECAM Sender mit 50 Hz Signal einstellen (Vertikalfrequenz). Sicherstellen, daß keine Kassette im Recorder ist. Die Tasten « + », « - » und « PLAY » (oder STOP, STBY und PLAY bei einigen Modellen, die nicht über die zuvor genannten Tasten verfügen). « ADJ » wird eingeblendet, die Einstellung ist aktiviert. 30 Sekunden warten (Berechnung und Abspeicherung EEPROM). Eine Kassette einlegen, um den Vorgang zu beenden und dann die Kassette auswerfen lassen.

Wichtig:

Diese Einstellungen sind im EEPROM IT004 abgespeichert, bei Austausch müssen die Setup-Werte eut sprechend der Gerätebezeichnung eingegeben werder, die Umschaltpunkte der Videoköpfe und die Clockfrequenz 16 MHz eingestellt werden.

1.4 Ansban

1.4.1 Hanptleiterplatte mit Mechanik

a) Die 2 Schrauben an der Mechanik entfernen.
b) Die 2 Klemmen, die die Hauptplatine halten, lösen.
c) Den Kassettenträger nach oben ziehen, um die Mechanik mit der Hauptplatine freizulegen.

1.4.2 Kassettenträger

Erst den Schritt 1.4.1 durchführen.
a) Den oberen Teil des Kassettenträgers nach Herausdrehen der 2 Schrauben entfernen.
b) Den Kassettenträger in Hochstellung bringen.
c) Den Kassettenträger an der Trommelseite leicht anheben.
d) Die weißen ~~Hebel~~ (links und rechts vom Kassettenträger) lockern und in Richtung Trommel drücken, bis die hinteren Nocken aus den Führungen springen.
e) Den Kassettenträger jetzt in die entgegengesetzte Richtung ziehen, bis die vorderen Nocken ebenfalls aus den Führungen springen.

1.4.3 Trennen der Hauptplatine und der Mechanikplatine

Erst den Schritt 1.4.1 befolgen.
a) Die Anschlüsse BT002 (Funktionssteuerungsmotor), BV001 (Trommel), BN002/BN004 (HIFI) und BS031 (Kopf A/A) abklemmen
b) Die mit einem Pfeil markierte Schraube an der Lötseite der Hauptplatine entfernen.
c) Den Antriebsriemen entfernen.
d) Die 4 Klemmen lösen und die Hauptplatine entfernen.

Ⓘ 1. ISTRUZIONI DI MANUTENZIONE

1.1 Regolazioni Service Mode

1.1.1 Software set up KDB

Accesso al Service Mode

a) Scollegare il videoregistratore dalla rete.

b) Mantenere premuti i tasti "+" e "-", quindi collegare il VR alla rete (in caso questi due tasti siano mancanti, utilizzare "STOP" e "PLAY"). Rilasciare i tasti "+" e "-".

c) Sullo schermo (OSD) apparirà una serie di 14 numeri che rappresentano la configurazione attuale.
Utilizzare il tasto 2 del telecomando per selezionare il digit successivo, mentre gli altri tasti numerici aumentano il valore del digit da 0 a F.
Ciascun apparecchio possiede un proprio valore di impostazione: tali valori sono elencati nell'apposita tabella.

d) Premere il tasto STOP per memorizzare.
A memorizzazione avvenuta, è indispensabile regolare il punto di commutazione delle testine e del clock a 16MHz. Il contatore del tempo di funzionamento (Service counter) viene azzerato. Utilizzare il tasto avanzamento veloce per accedere alle pagine successive del Service Mode. Queste pagine riguardano le funzioni "Service counter" e "Diagnosi automatica" (unicamente per i modelli destinati alla Gran Bretagna).
Per uscire dal Service Mode premere il tasto EXIT del telecomando.

1.1.2 Tempo di funzionamento

Il tempo di funzionamento viene indicato in ore nella pagina del Service Mode "Service Counter".

1.1.3 Autodiagnosi (solo per modelli disponibili in Gran Bretagna)

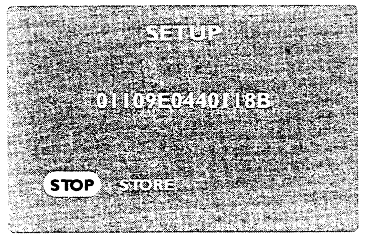
In caso di guasto meccanico o in seguito a un errore di manipolazione, viene memorizzato nella EEPROM un numero di 10 cifre corrispondente al guasto rilevato. Dall'analisi delle 10 cifre visualizzate, si può risalire alla causa del guasto.

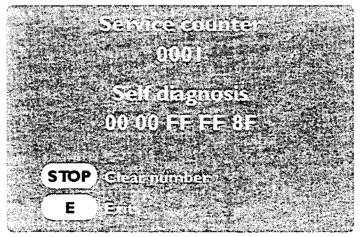
Visualizzazione del messaggio di errore

Al messaggio di errore si accede:
a) dalla prima pagina del "SERVICE SET UP", premendo il tasto avanzamento veloce ">>" del telecomando.
b) in STOP o in STBY, in assenza di informazioni OSD sul televisore, premendo il tasto ERASE per 10 secondi.

Interpretazione dei messaggi di errore

Il significato dei numeri che compongono il messaggio di errore è illustrato nella seguente tabella.


SETUP
01109E0440118B
STOP STORE


Service counter
0001
Self diagnosis
00 00 FF FF 8F
STOP Clear number
E Exit

NUMERO DI CIFRE	1 & 2	3 & 4	5,6,7 & 8	9 & 10
SIGNIFICATO	Funzione richiesta e posizione meccanica al momento dell'anomalia	Compito che sta svolgendo il circuito Servo (µP)	Funzione in corso prima dell' anomalia	Indicazione anomalia
VALORE	1 - Av. e Rit veloce 2 - Stop 3 - Standby 3 - Riproduzione 4 - Ricerca indietro 5 - Caricamento/Scaricamento 6 - Off 7 - Espulsione F - Inizializzazione	00 - Stop 01 - Riavvolgimento 02 - Avvolgimento 04 - Riproduzione 11 - Ricerca indietro 12 - Ricerca avanti 44 - Registrazione 84 - Fermo immagine C4 - Pausa registrazione 40 - Registrazione/Pausa registrazione 10 - Ricerca	0 0 0 0 - Normale 0 0 0 1 - Registrazione 0 0 0 4 - Avanzamento sequenziale 0 0 0 8 - Off 0 0 1 0 - Espulsione 0 0 2 0 - Stop 0 0 4 0 - Capstan frenato 0 0 8 0 - Inizializzazione 0 2 0 0 - Registrazione continua 0 4 0 0 - Riproduzione continua 0 8 0 0 - Reg. o Ripr. continua 1 0 0 0 - Avanzamento o Riavvolgimento 2 0 0 0 - Ricerca 4 0 0 0 - Fermo immagine 8 0 0 0 - Riproduzione	81 - Motore tamburo testine 82 - Bobina svolgimento 84 - Bobina avvolgimento 88 - Funzione incompleta

1.2 Punto di commutazione delle testine

Introdurre una cassetta test protetta nel videoregistratore, che commuta automaticamente in riproduzione. Quando il display indica "PLAY", premere il tasto "STATUS" del telecomando. Quindi, premere contemporaneamente i tasti "+" e "-" e infine il tasto "PLAY" sul frontale (oppure "STOP", "STBY" e "PLAY" per i modelli sprovvisti dei tasti "+" e "-"). Il display indicherà "ADJ" con il VR in riproduzione. Dopo alcuni secondi terminare la regolazione, premendo il tasto "PLAY" sul frontale (vedere paragrafo 2.3.6 relativo alle regolazioni elettriche).

1.3 Regolazione Clock a 16MHz

Questa regolazione serve a compensare la tolleranza del quarzo a 16MHz; il dato di compensazione che ne deriva viene memorizzato nella EEPROM.
La regolazione viene eseguita confrontando la frequenza del Clock a 16MHz con la frequenza del segnale di sincronismo video. Il dato di compensazione sarà memorizzato nella EEPROM.
Collegare il segnale d'antenna in ingresso e sintonizzarsi su un canale PAL o SECAM, con frequenza di riga a 50Hz. In assenza di cassetta, premere contemporaneamente i tasti "+", "-" e "PLAY" (oppure i tasti "STOP", "STBY" e "PLAY" per i modelli privi dei tasti "+" e "-"). Il display indicherà "ADJ"; ciò significa che la procedura di regolazione è stata attivata. Attendere circa 30 secondi per il calcolo e la memorizzazione del valore della regolazione nella EEPROM. Terminare la regolazione inserendo una cassetta, quindi espellerla.

Importante:

I valori di queste regolazioni sono memorizzati nella EEPROM IT004. In caso di sostituzione della memoria, é necessario reinserire il valore d'impostazione corrispondente al riferimento commerciale, regolare il punto di commutazione delle testine video e il Clock a 16MHz.

1.4 Smontaggio

1.4.1 Insieme piastra principale e meccanica

a) Togliere il coperchio superiore e la vite di fissaggio del coperchio inferiore.
b) Togliere il frontale e staccare il cavo di collegamento dalla piastra comandi.
c) Togliere le 2 viti di fissaggio della meccanica.
d) Sganciare i 2 fermi che bloccano la piastra principale.
e) Tirare il portacassette verso l'alto per liberare l'insieme meccanica / piastra principale.

1.4.2 Portacassette

Prima di procedere con questa operazione, eseguire il punto 1.4.1
a) Togliere la parte superiore del portacassette rimuovendo le 2 viti.
b) Disporre il portacassette nella posizione finale più alta (posizione "Eject").
c) Sollevare leggermente il lato vano cassette posizionato vicino al tamburo testine.
d) Liberare le leve bianche (a sinistra e a destra del portacassette) quindi spingere quest' ultimo verso il tamburo, fino a che i perni guida (sul lato posteriore) non saranno usciti dai binari.
e) Spingere infine il portacassette nella direzione opposta, fino a quando anche i perni guida del lato anteriore non saranno usciti dai binari.

Separazione della piastra principale dalla meccanica

Prima di procedere con questa operazione, eseguire il punto 1.4.1
a) Staccare i collegamenti BT002 (motore controllo funzioni), BV001 (tamburo), BN002/BN004 (HF-FI) e BS031 (testina A/C).
b) Togliere la vite contraddistinta dalla freccia, sul lato rame della piastra principale.
c) Togliere la cinghia motore.
d) Sganciare i 4 fermi e togliere la piastra principale.

Ⓔ 1. INSTRUCCIONES DE MANTENIMIENTO

1.1 Ajustes del modo servicio

1.1.1 Modo servicio de la placa KDB

Acceso al modo servicio:

a) Desconecte el vídeo de la red eléctrica.

b) Mantenga pulsadas las teclas « + » y « - » y luego conecte el vídeo a la red eléctrica (en aquellos videos que no tiene estas teclas, use « STOP » y « PLAY »). Suelte las teclas « + » y « - ».

c) En la pantalla (OSD), aparecen una serie de 14 dígitos que representan la configuración en curso.
Use las teclas numéricas del telemando para incrementar cada valor de 0 a F, la tecla 2 permite pasar al dígito siguiente.
Cada aparato tiene su propio valor de Configuración, estos valores se indican en el Sumario.

d) Para memorizar los nuevos valores, pulse « STOP ». Después de la memorización, se deben reajustar los ajustes de los puntos de conmutación y del reloj 16 MHz, el contador del tiempo de funcionamiento (Contador de servicio) se pone a cero.
La tecla AVANCE RAPIDO (>>) se emplea para acceder a las páginas siguientes del modo servicio. Estas páginas introducen las funciones « Contador de servicio » y « Autodiagnóstico » (sólo para los modelos UK).
Para salir del modo servicio pulse la tecla EXIT(E) del telemando.

1.1.2 Tiempo de funcionamiento

Este tiempo se da en horas en el « Contador de servicio ».

1.1.3 Autodiagnóstico (sólo para los modelos UK)

Cuando se produce un incidente mecánico o después de un error de manipulación, se memoriza en la EPROM un número de 10 cifras que representa este funcionamiento defectuoso.
La visualización de este número en la pantalla puede permitir la solución del problema que se ha presentado.

Visualización del mensaje de error

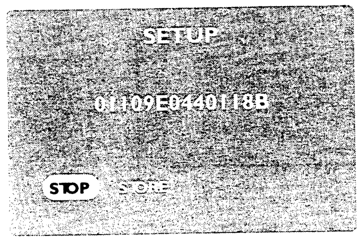
Acceso al mensaje de error:

a) Cuando se visualiza la página « SERVICE SETUP » en la pantalla; pulse la tecla de avance rápido « >>« del telemando.

b) En **modo STOP o STANDBY**, cuando no hay visualización en la pantalla del televisor, pulse la tecla ERASE durante 10 segundos.

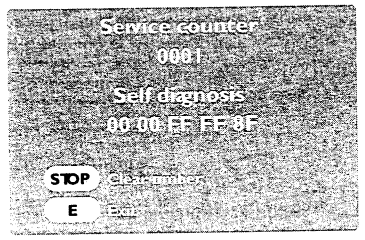
Interpretación del mensaje de error

El significado de los números que componen el mensaje de error se indica en el cuadro siguiente:



SETUP

01109E0440118B



Service counter

0001

Self diagnosis

00 00 FF FF 8F

NÚMERO DE DÍGITO	1 & 2	3 & 4	5,6,7 & 8	9 & 10
SIGNIFICADO	Función solicitada y posición de la mecánica en el momento del fallo	Tarea servo ejecutándose	Tarea activa antes de parada anormal	Indicación de la anomalia
VALOR	1 - Avance 2 - Stop 3 - Standby 3 - Play 4 - Rev 5 - Carga/Descarga 6 - Off 7 - Expulsar F - Inicial	00 - Stop 01 - Frew 02 - FF 04 - Play 11 - Rev 12 - Cue 44 - Record 84 - Still C4 - Rec Pause 40 - Rec/Rec P 10 - Modo búsqueda	0 0 0 0 - Normal 0 0 0 1 - Record 0 0 0 4 - Step 0 0 0 8 - Off 0 0 1 0 - Eject. 0 0 2 0 - Stop 0 0 4 0 - Freno del capstan 0 0 8 0 - Initial 0 2 0 0 - Grabación infinita 0 4 0 0 - Lectura infinita 0 8 0 0 - Continuo 1 0 0 0 - Avance 2 0 0 0 - Búsqueda 4 0 0 0 - Parada 8 0 0 0 - Lectura	81 - Tambor 82 - Bobina izquierda 84 - Bobina derecha 88 - Tarea incompleta

1.2 Punto de conmutación de las cabezas

Introduzca una cinta patrón protegida en el vídeo. Este pasa automáticamente al modo lectura. Cuando la visualización indica « PLAY » pulse la tecla « STATUS » del telemando. Luego, pulse simultáneamente las teclas « + », « - » y luego, « PLAY » del frontal (o PLAY, STBY y STOP en los modelos que no tienen las teclas « + » y « - »). En la pantalla aparece « ADJ ». El vídeo permanece en modo lectura. Después de algunos segundos, detener el ajuste pulsando la tecla « PLAY » del frontal. (Vea el § 2.3.6 sobre los ajustes eléctricos).

1.3 Ajuste del reloj de 16 MHz

Para compensar la tolerancia del cuarzo de 16 MHz , la información de compensación se memoriza en la EEPROM. El ajuste se realiza por comparación de la frecuencia del reloj de 16 MHz con la frecuencia de la señal de sincronización vídeo. El valor de compensación se memorizará en la EEPROM.
Conecte la antena a la entrada del sintonizador y ajuste a un canal PAL/Secam con una señal de 50 Hz (frecuencia de trama). Verifique que ningún cassette se encuentra en el vídeo. Pulse las teclas « + », « - » y « PLAY » (o STOP, STBY y PLAY en los modelos que no tienen las teclas « + » y « - »). En la pantalla aparece « ADJ », se activa el ajuste. Espere 30 segundos (para calcular y memorizar en la EEPROM). Introducir un cassette para detener el proceso y expulsar el cassette.

Nota importante:
Estos ajustes se memorizan en la EEPROM IT004, si ella se cambia, debe introducir el valor de configuración correspondiente a la referencia comercial, ajustar los puntos de conmutación de las cabezas vídeo y el reloj de 16 MHz.

1.4 Desmontaje

1.4.1 Conjunto placa principal y mecánica

a) Retire el tornillo de fijación del blindaje inferior.

b) Retire el frontal y desconecte los conectores de la placa de comandos.

c) Retire los 2 tornillos de la placa mecánica.

d) Libere los 2 clips que mantienen la placa principal.

e) Tire del portacassette hacia arriba para despejar el conjunto de la mecánica con la placa principal.

1.4.2 Portacassette

Antes de efectuar esta operación debe ejecutar la etapa 1.4.1.

a) Retire la parte superior del portacassette desmontando los 2 tornillos.

b) Ponga el portacassette en posición alta.

c) Levante ligeramente el portacassette por el lado del tambor.

d) Libere las palancas blancas (a la izquierda y a la derecha del portacassette) y empújelo hacia el tambor hasta que las puntas (traseras) salgan de los raíles guías.

e) Tire el portacassette en la dirección opuesta hasta que las puntas (delanteras) también se liberen de los raíles.

1.4.3 Separación de la placa principal de la placa mecánica

Antes de efectuar esta operación debe ejecutar la etapa 1.4.2.

a) Desconecte los conectores BT002 (motor de control de funciones). BV001 (tambor), BN002/BN004 (HIFI) y BS031 (cabeza A/C).

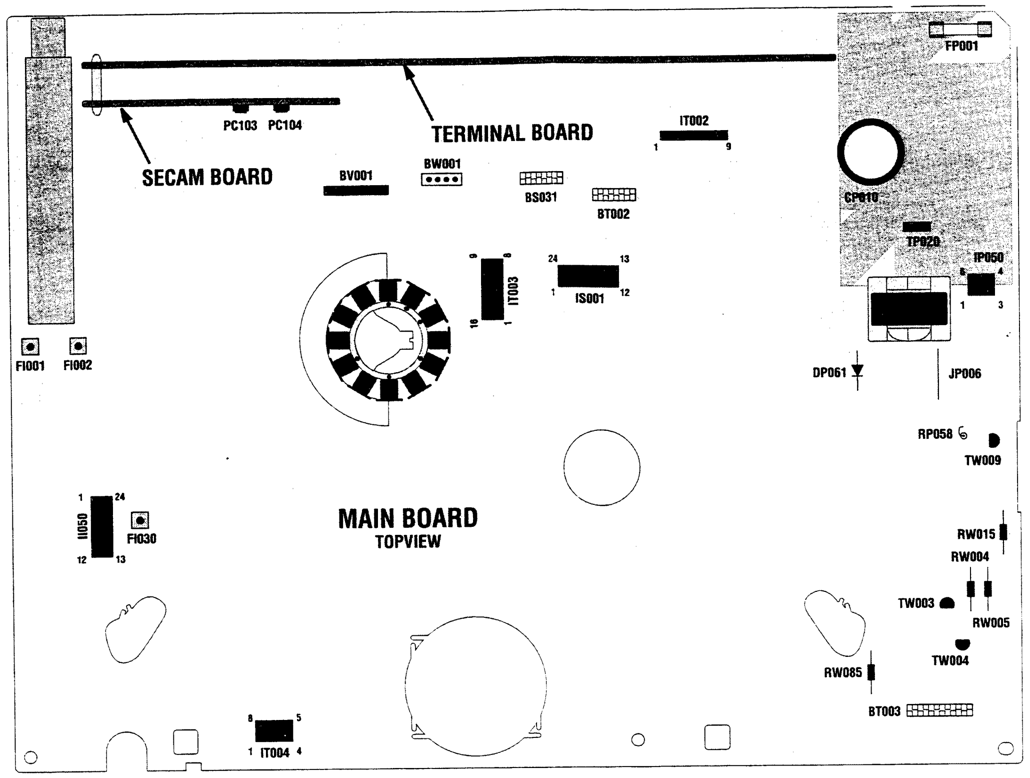
b) Retire los tornillos marcados con una flecha por el lado de cobre de la placa principal.

c) Retire la correa de la polea.

d) Libere los 4 clips y retire la placa principal.

2. Electrical adjustments - Réglages électriques - Elektrische Einstellungen - Regolazioni elettriche - Ajustes eléctricos

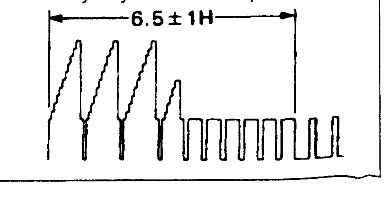
2.1. Test points and adjustment overview -Emplacement des points test et des réglages - Testpunkt und Abgleich-Übersicht - Punti test e panoramica generale delle regolazioni - Punto de prueba y emplazamientos de los ajustes



2.2. On screen display (Main board) - OSD: Affichage sur l'écran (platine principale) - OSD: Hauptleiterplatte - OSD: Visualizzazione su Schermo - OSD: Visualización en la pantalla

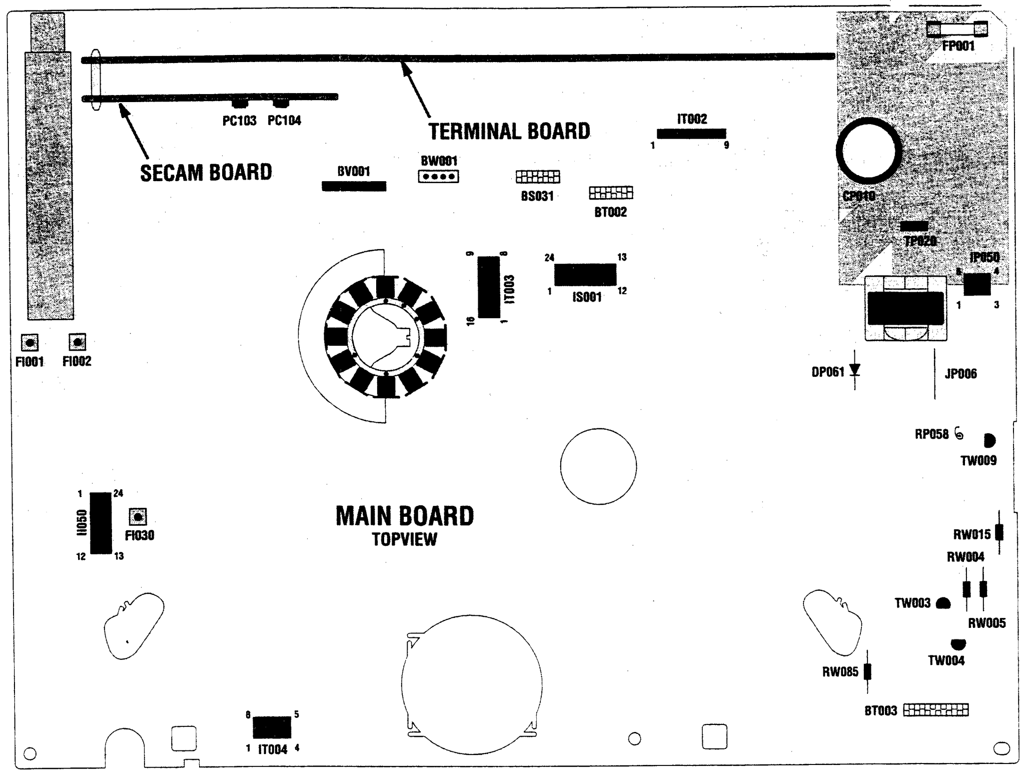
N°	Item	Mode & Signal	Test equipment	Test point	Description
2.2.1	OSD chroma oscillator		Frequency counter	RT103	Check for 17.734475MHz±650Hz

2.3. Measurements Servo Section (Main Board) - Vérifications sur les circuits d'asservissements - Messungen Servoteil - Controlli parte Servo - Verificaciones para parte Servo

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.3.1	Oscillator frequency		Frequency counter	IT001 pin 63	Check for 8.0MHz±1250Hz
2.3.2	5V Regulated		Voltmeter	IT001 pin 64	Check for 5.1V±0.3V
2.3.3	Drum FF	PB /REC (SP)	Frequency counter	IT001 pin 89	Check for 40ms±10µs
2.3.4	Capstan FG	PB /REC (SP)	Frequency counter	IT001 pin 44	Check for f= 757Hz±10Hz
2.3.5	CTL signal	PB /REC (SP)	Oscilloscope	IT001 pin 46	Check for f= 25Hz, U= 5Vpp
2.3.6	Head switching point	PB	Dual trace Oscilloscope Trigger ext. BW001 (Drum FF)	BX001 pin 19	1. Insert alignment test cassette. 2. When the display shows «PLAY E----» press the STATUS key on remote control. 3. Press «+» , «-» and «PLAY». 4. Display shows «ADJ». 5. Confirm that head switching point is 6.5 H ± 0.5H before vert. synchro. 6. Stop the adjustment by pressing Play key on the front panel. 

2. Electrical adjustments - Réglages électriques - Elektrische Einstellungen - Regolazioni elettriche - Ajustes eléctricos

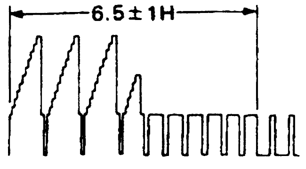
2.1. Test points and adjustment overview -Emplacement des points test et des réglages - Testpunkt und Abgleich-Übersicht - Punti test e panoramica generale delle regolazioni - Punto de prueba y emplazamientos de los ajustes



2.2. On screen display (Main board) - OSD: Affichage sur l'écran (platine principale) - OSD: Hauptleiterplatte - OSD: Visualizzazione su Schermo - OSD: Visualización en la pantalla

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.2.1	OSD chroma oscillator		Frequency counter	RT103	Check for 17.734475MHz±650Hz

2.3. Measurements Servo Section (Main Board) - Vérifications sur les circuits d'asservissements - Messungen Servoteil - Controlli parte Servo - Verificaciones para parte Servo

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.3.1	Oscillator frequency		Frequency counter	IT001 pin 63	Check for 8.0MHz±1250Hz
2.3.2	5V Regulated		Voltmeter	IT001 pin 64	Check for 5.1V±0.3V
2.3.3	Drum FF	PB /REC (SP)	Frequency counter	IT001 pin 89	Check for 40ms±10µs
2.3.4	Capstan FG	PB /REC (SP)	Frequency counter	IT001 pin 44	Check for f= 757Hz±10Hz
2.3.5	CTL signal	PB /REC (SP)	Oscilloscope	IT001 pin 46	Check for f= 25Hz, U= 5Vpp
2.3.6	Head switching point	PB	Dual trace Oscilloscope Trigger ext. BW001 (Drum FF)	BX001 pin 19	1. Insert alignment test cassette. 2. When the display shows «PLAY E----» press the STATUS key on remote control. 3. Press «+» , «-» and «PLAY». 4. Display shows «ADJ». 5. Confirm that head switching point is 6.5 H ± 0.5H before vert. synchro. 6. Stop the adjustment by pressing Play key on the front panel. 

2.4. RF/IF Signal processing (Main Board) - Traitement HF/FI (Platine Principale) - HF/ZF signalverarbeitung - Elaborazione segnale HF/FI - Tratamiento RF/FI

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.4.1.	31,9MHz TRAP	Apply a signal of 31,9 MHz with 15mV output level to IF input (pin13 of tuner).Standard Pal B/G.	Spectrum Analyser	FI010 pin1	Align FI002 for minimum 31,9MHz signal. Attenuation of trap wrt 37MHz ≥15dB.
2.4.2.	40,4MHz TRAP	Apply a signal of 40,4 MHz with 15mV output level to IF input(pin13 of tuner).Standard Pal B/G.	Spectrum Analyser	FI010 pin1	Align FI001 for minimum 40,4MHz signal. Attenuation of trap wrt 37MHz ≥15dB.
2.4.3.	Video reference filter	Apply a signal of 38,9 MHz with 20mV output level to IF input(pin13 of tuner).Standard Pal B/G.	DC voltmeter	II050 pin17	Adjust Reference Filter FI030 for 2,5V DC ±0,1V
2.4.4.	AGC	Apply a RF signal of 203,25MHz at 3mV$_{rms}$ output level without modulation to Tuner Antenna input.	Spectrum Analyser	Tuner pin 13	Adjust AGC potentiometer (PI050) so that it is -10dB ±2dB attenuation from the maximum output level.

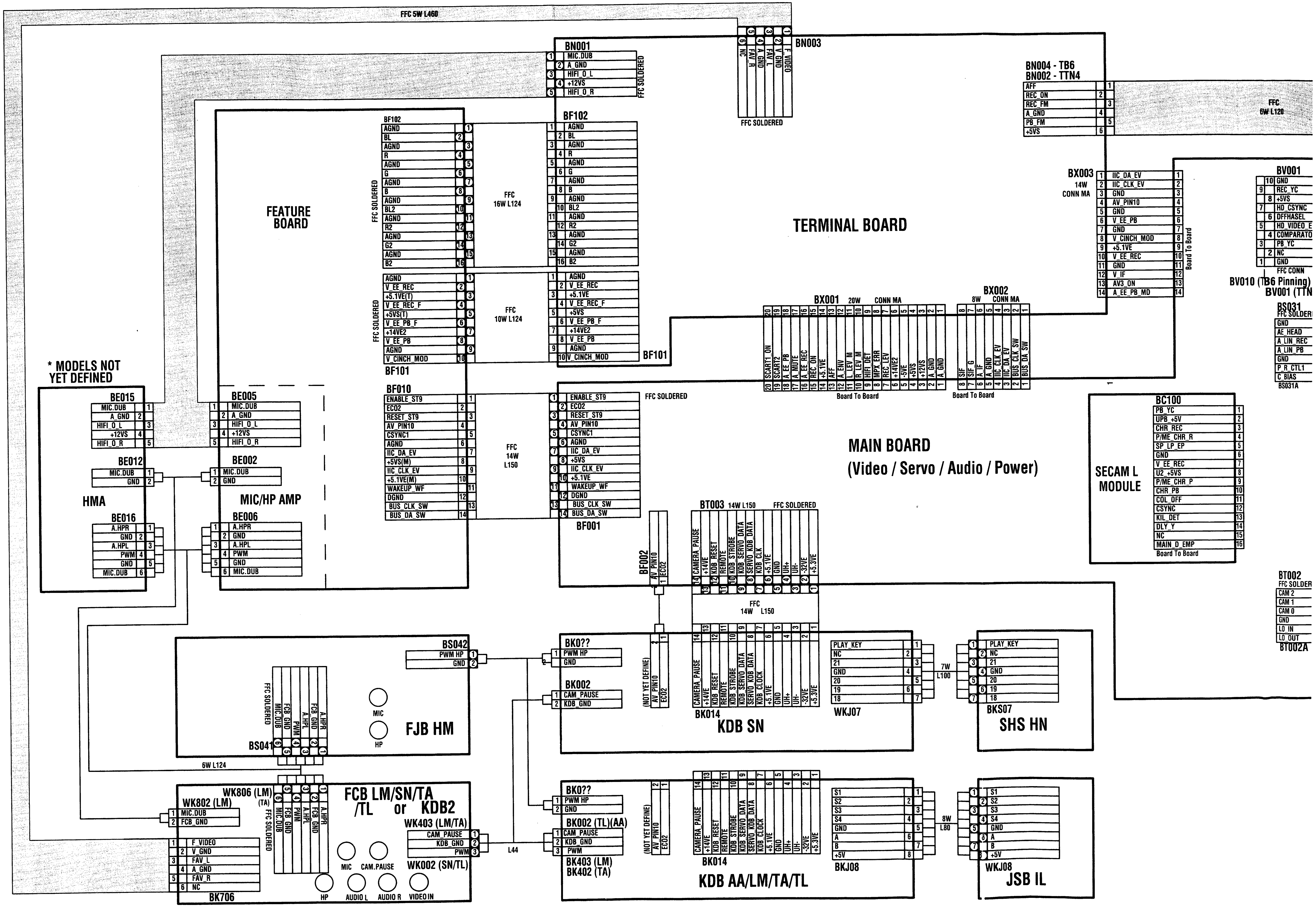
2.5. Video signal processing (Main board) - Traitement video (platine principale) - Video Signalteil - Elaborazione segnale video - Tratamiento video

N°	Item	Mode & Signal	Test equipment	Test point	Description
2.5.1.	CVBS EE Level	Apply a PAL grey scale (1Vpp) to BX003 pin8	Oscilloscope	BX003 pin6	Check for 2Vpp ±0,1 Burst = 600mVpp ±80
	For models with SECAM and MESECAM	Repeat with Secam colour bar			Magenta bar = 420mVpp ±40
2.5.2.	FM Record level	Select PAL record mode without signal	Oscilloscope	TV008 emitter	Check for 200mVpp ±3dB
2.5.3.	Chroma Playback Level	Select PB mode and apply a PAL FM modulated with colour bar to BV001 pin8	Oscilloscope	BX003 pin6	Pal burst = 420mVpp ±80
	Models with SECAM	Repeat with Secam FM signal modulated with full field magenta			Magenta bar = 360mV ±50
	Just for SECAM models (Secam Board)				
2.5.4.	Anti Bell filter 1,0715MHz	Apply a Secam full field magenta colour to BC100 pin7	Oscilloscope	IC100 pin28	Adjust PC103 such that the magenta signal in R-Y and B-Y have the same amplitude
2.5.5.	Bell filter 4,286MHz	Apply a Secam full field magenta colour to BC100 pin7	Oscilloscope	IC100 pin26	Adjust PC104 such that the magenta signal in R-Y and B-Y have the same amplitude

2.6. Audio signal processing (Main board) - Traitement audio (Platine principale) - Audio Signalverarbeitung - Elaborazione segnale audio - Procesamiento audio

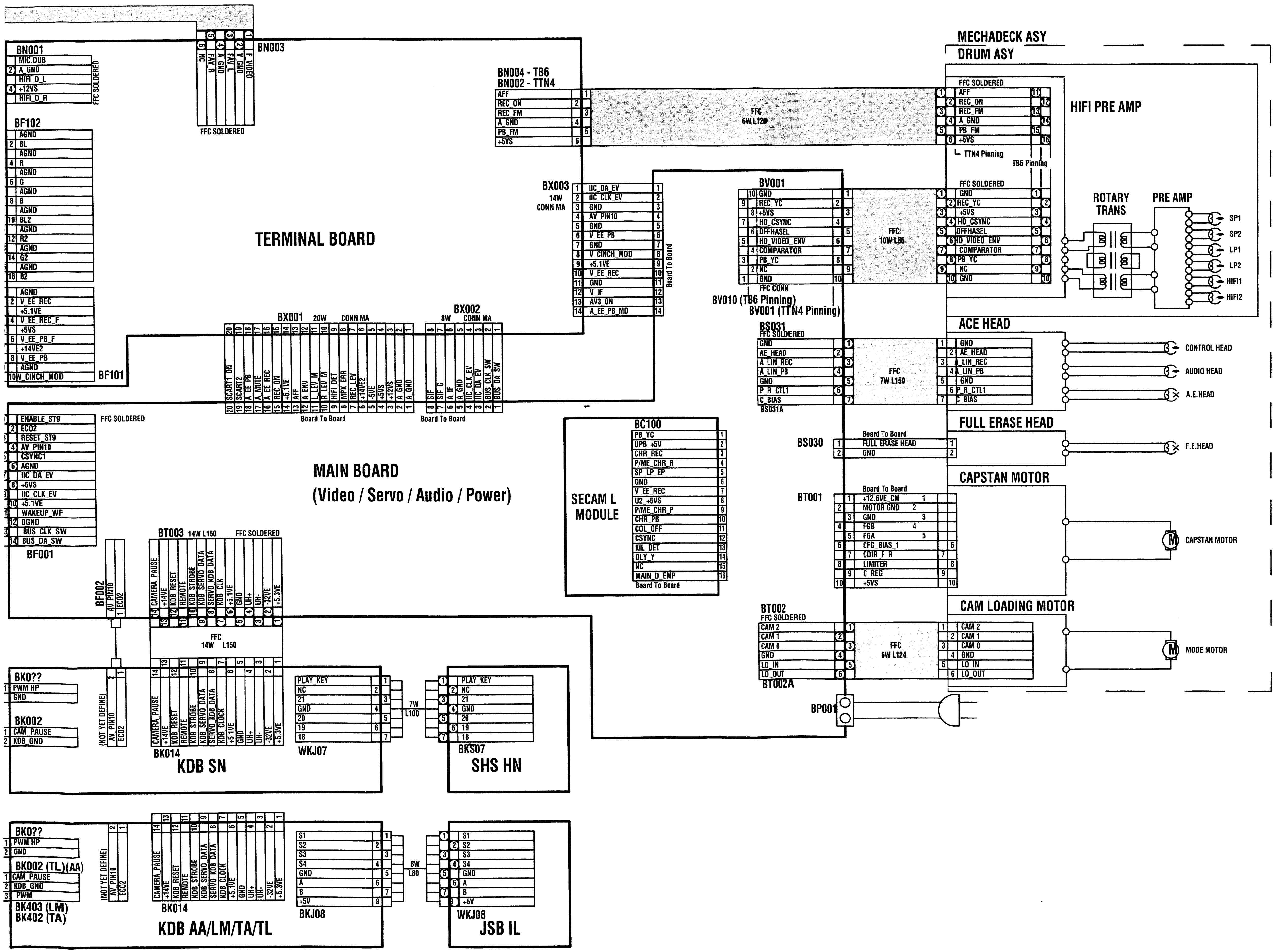
N°	Item	Mode & Signal	Test equipment	Test point	Description
2.6.1	Bias oscillator frequency & level	REC (without signal)	Oscilloscope	BS030 pin1-2	Check for 70KHz±7KHz 40Vpp±10V
2.6.2	Bias current	REC (without signal)	Oscilloscope	IS001 pin17-7	Check for 1.3Vpp±0.2V (~) 460±50mVrms $I = V_{PIN17(VRMS)}/(RS012+RS013)\Omega$

WIRING DIAGRAM - SCHEMA D'INTERCONNECTIONS - VERDRAHTUNGSPLAN - DIAGRAMMA DELLE INTERCONNESSIONI - ESQUEMA DE INTERCONEXIONES



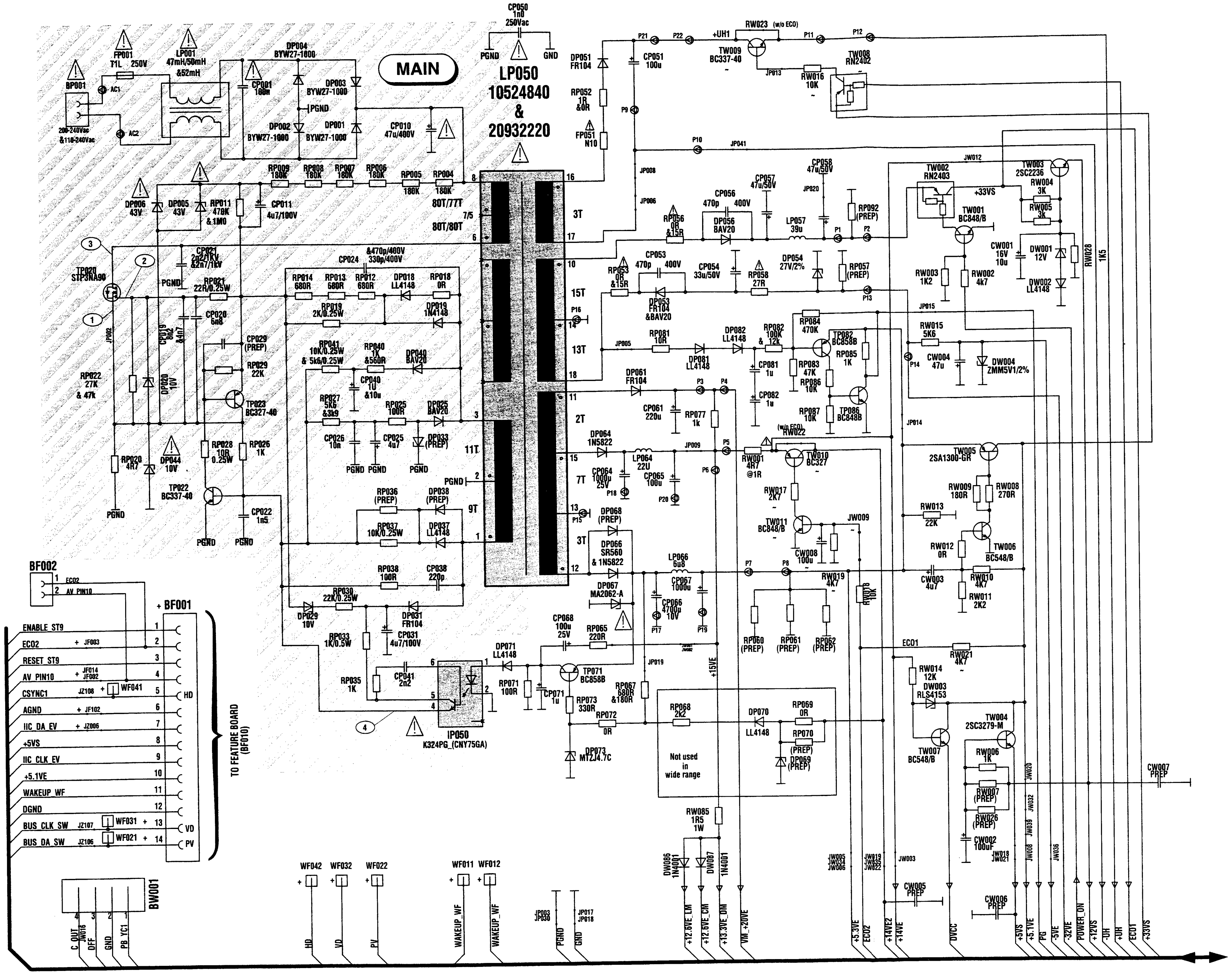
FFC 5W L460
BN001
MIC.DUB
A_GND
HIFI_O_L
+12VS
HIFI_O_R
FFC SOLDERED
BN003
F_VIDEO
V_GND
FAV_L
A_GND
FAV_R
NC
FFC SOLDERED
BN004 - TB6
BN002 - TTN4
AFF
REC_ON
REC_FM
A_GND
PB_FM
+5VS
FFC 6W L120
FEATURE BOARD
TERMINAL BOARD
BF102
AGND
BL
R
G
B
BL2
R2
G2
B2
FFC 16W L124
FFC SOLDERED
V_EE_REC
+5.1VE(T)
V_EE_REC_F
+5VS(T)
V_EE_PB_F
+14VE2
V_EE_PB
V_CINCH_MOD
FFC 10W L124
BF101
BX003
14W CONN MA
IIC_DA_EV
IIC_CLK_EV
GND
AV_PIN10
V_EE_PB
V_CINCH_MOD
+5.1VE
V_EE_REC
V_IF
AV3_ON
A_EE_PB_MD
Board To Board
BV001
REC_YC
+5VS
HD_CSYNC
DFFHASEL
HD_VIDEO_E
COMPARATO
PB_YC
NC
FFC CONN
BV010 (TB6 Pinning)
BV001 (TTN
BX001 20W CONN MA
SCART1_ON
SCART2
A_EE_PB
A_MUTE
A_EE_REC
REC_ON
+5.1VE
AFF
A_ENV
L_LEV_M
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE2
-5VE
+5VS
+12VS
A_GND
Board To Board
BX002
8W CONN MA
SIF
SIF_G
A_IF
A_GND
IIC_CLK_EV
IIC_DA_EV
BUS_CLK_SW
BUS_DA_SW
BS031
FFC SOLDER
AE_HEAD
A_LIN_REC
A_LIN_PB
P_R_CTL1
C_BIAS
BS031A
* MODELS NOT YET DEFINED
BE015
BE005
BE012
BE002
HMA
MIC/HP AMP
BE016
BE006
A.HPR
A.HPL
PWM
BF010
ENABLE_ST9
ECO2
RESET_ST9
AV_PIN10
CSYNC1
AGND
IIC_DA_EV
+5VS(M)
IIC_CLK_EV
+5.1VE(M)
WAKEUP_WF
DGND
BUS_CLK_SW
BUS_DA_SW
FFC 14W L150
FFC SOLDERED
BF001
MAIN BOARD
(Video / Servo / Audio / Power)
BC100
PB_YC
UPB_+5V
CHR_REC
P/ME_CHR_R
SP_LP_EP
V_EE_REC
U2_+5VS
P/ME_CHR_P
CHR_PB
COL_OFF
CSYNC
KIL_DET
DLY_Y
MAIN_D_EMP
Board To Board
SECAM L MODULE
BT003 14W L150
FFC SOLDERED
BF002
CAMERA_PAUSE
+14VE
KDB_RESET
REMOTE
KDB_STROBE
KDB_SERVO_DATA
SERVO_KDB_DATA
KDB_CLK
KDB_CLOCK
UH+
UH-
-32VE
+5.3VE
FFC 14W L150
BT002
FFC SOLDER
CAM 2
CAM 1
CAM 0
LO_IN
LO_OUT
BT002A
BS042
PWM HP
MIC
HP
FJB HM
BS041
6W L124
BK0??
BK002
CAM_PAUSE
KDB_GND
(NOT YET DEFINE)
BK014
KDB SN
WKJ07
PLAY_KEY
7W L100
BKS07
SHS HN
WK806 (LM)
(TA)
WK802 (LM)
FCB LM/SN/TA /TL or KDB2
WK403 (LM/TA)
WK002 (SN/TL)
F_VIDEO
V_GND
FAV_L
FAV_R
BK706
CAM.PAUSE
AUDIO L
AUDIO R
VIDEO IN
L44
BK002 (TL)(AA)
BK403 (LM)
BK402 (TA)
KDB AA/LM/TA/TL
BKJ08
S1
S2
S3
S4
8W L80
WKJ08
JSB IL

Seppi.


TERMINAL BOARD
MAIN BOARD
(Video / Servo / Audio / Power)
MECHADECK ASY
DRUM ASY
HIFI PRE AMP
ROTARY TRANS
PRE AMP
SP1
SP2
LP1
LP2
HIFI1
HIFI2
ACE HEAD
CONTROL HEAD
AUDIO HEAD
A.E.HEAD
FULL ERASE HEAD
F.E.HEAD
CAPSTAN MOTOR
CAM LOADING MOTOR
MODE MOTOR
SECAM L MODULE
BC100
BN001
BN003
BN004 - TB6
BN002 - TTN4
FFC 6W L120
TTN4 Pinning
TB6 Pinning
BF102
BF101
BF001
BF002
BX003 14W CONN MA
BX001 20W CONN MA
BX002 8W CONN MA
Board To Board
FFC SOLDERED
BV001
FFC 10W L55
FFC CONN
BV010 (TB6 Pinning)
BV001 (TTN4 Pinning)
BS031
BS031A
FFC 7W L150
BS030
BT001
BT002
BT002A
FFC 6W L124
BP001
BT003 14W L150
FFC 14W L150
BK0??
BK002
BK014
KDB SN
WKJ07
7W L100
BKS07
SHS HN
BK002 (TL)(AA)
BK403 (LM)
BK402 (TA)
KDB AA/LM/TA/TL
BKJ08
8W L80
WKJ08
JSB IL
(NOT YET DEFINE)

POWER SUPPLY INTERFACE - INTERFACE ALIMENTATION - NETZEIL - ALIMENTAZIONE - INTERFAZ ALIMENTACIÓN

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


MAIN
LP050
10524840
&
20932220
CP050 1n0 250Vac
PGND
GND
BP001
FP001 T1L 250V
LP001 47mH/50mH &52mH
DP004 BYW27-1000
DP003 BYW27-1000
DP002 BYW27-1000
DP001 BYW27-1000
CP001 100n
CP010 47u/400V
200-240Vac &110-240Vac
AC1
AC2
TP020 STP3NA90
TP022 BC337-40
TP023 BC327-40
IP050 K324PG_(CNY75GA)
BF002
BF001
BW001
TO FEATURE BOARD (BF010)
ENABLE_ST9
ECO2
RESET_ST9
AV_PIN10
CSYNC1
AGND
IIC_DA_EV
+5VS
IIC_CLK_EV
+5.1VE
WAKEUP_WF
DGND
BUS_CLK_SW
BUS_DA_SW
HD
VD
PV
C_OUT
DFF
GND
PB_YC1
WF042
WF032
WF022
WF011
WF012
WAKEUP_WF
PGND
GND
+12.6VE_LM
+12.6VE_CM
+13.3VE_DM
VM_+20VE
+5.3VE
ECO2
+14VE2
+14VE
DVCC
+5VS
+5.1VE
PG
-5VE
-32VE
POWER_ON
+12VS
+UH
ECO1
+33VS
TW001 BC848/B
TW002 RN2403
TW003 2SC2236
TW004 2SC3279-M
TW005 2SA1300-GR
TW006 BC548/B
TW007 BC548/B
TW008 RN2402
TW009 BC337-40
TW010 BC327
TW011 BC848/B
TP071 BC858B
TP082 BC858B
TP086 BC848B
Not used in wide range
1
2
3
4

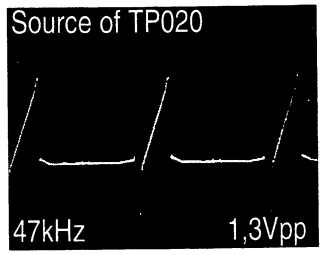
POWER		MODE	
LOC	PIN	Play	Std-by
TP020	G	2	1,2
	S	0,2	0,1
	D	360	310
TP022	B	0,3	0,5
	E	0	0
	C	1,3	1,3
TP023	B	1,3	0,9
	E	2	1
	C	0,2	0
TW001	B	0,7	0
	E	0	0
	C	0	32
TW002	B	0	32
	E	31	32
	C	31	0
TP071	B	4,7	4,7
	E	5,4	5,4
	C	1,7	1,7
TP082	B	7	7
	E	12,2	0
	C	0	0
TP086	B	0	0
	E	0	0
	C	5,3	5,3
IP050	1	1	1
	2	0	0
	3	NC	NC
	4	0,3	0,5
	5	17,2	13,5
	6	0,9	1,1
TW003	B	12,8	0
	E	12,2	0
	C	13,7	13,3
TW004	B	5,9	0
	E	5,2	0
	C	5,3	5,3
TW005	B	4,6	4,6
	E	5,4	5,4
	C	5,3	5,3
TW006	B	0,7	0,7
	E	0	0
	C	0	0
TW007	B	5,9	5,9
	E	5,1	5,1
	C	5,4	5,4

POWER		MODE		
LOC	PIN	Play	Std-by	V/ECO
TW008 *ECO1* Masse pin17 LP050	B	0	0	4,7
	E	5,3	5,4	4,9
	C	5,3	5,4	*"-16,8"*
TW009 *ECO1*	B	4,7	4,3	0
	E	3,9	3,5	0
	C	4	3,6	6
TW010 *ECO2*	B	13	12,6	12,3
	E	13,7	13,3	12,9
	C	13,7	13,3	0,4
TW011 *ECO2*	B	0,7	0,7	0
	E	0	0	0
	C	0	0	12,3

▨ Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzeils.
Parte dello châssis collegata alla rete.
Parte del chasis conectada a la red.

#: NOT USED IN U MODELS
*: NOT USED IN ME MODELS
$: NOT USED IN PS/PE MODELS
%: NOT USED IN NTSC M MODELS

+: ONLY FOR FEATURE MODEL.
@: FOR AUDIO DUBBING MODELS
&: FOR WIDE RANGE POWER SUPPLY
~: USED IN ECO MODELS



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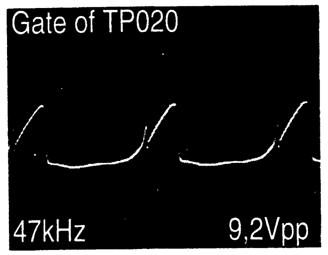

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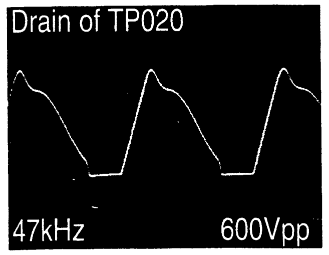

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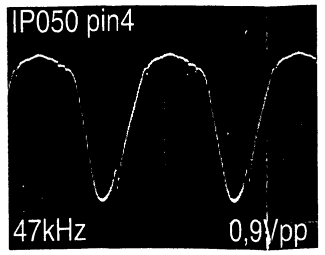

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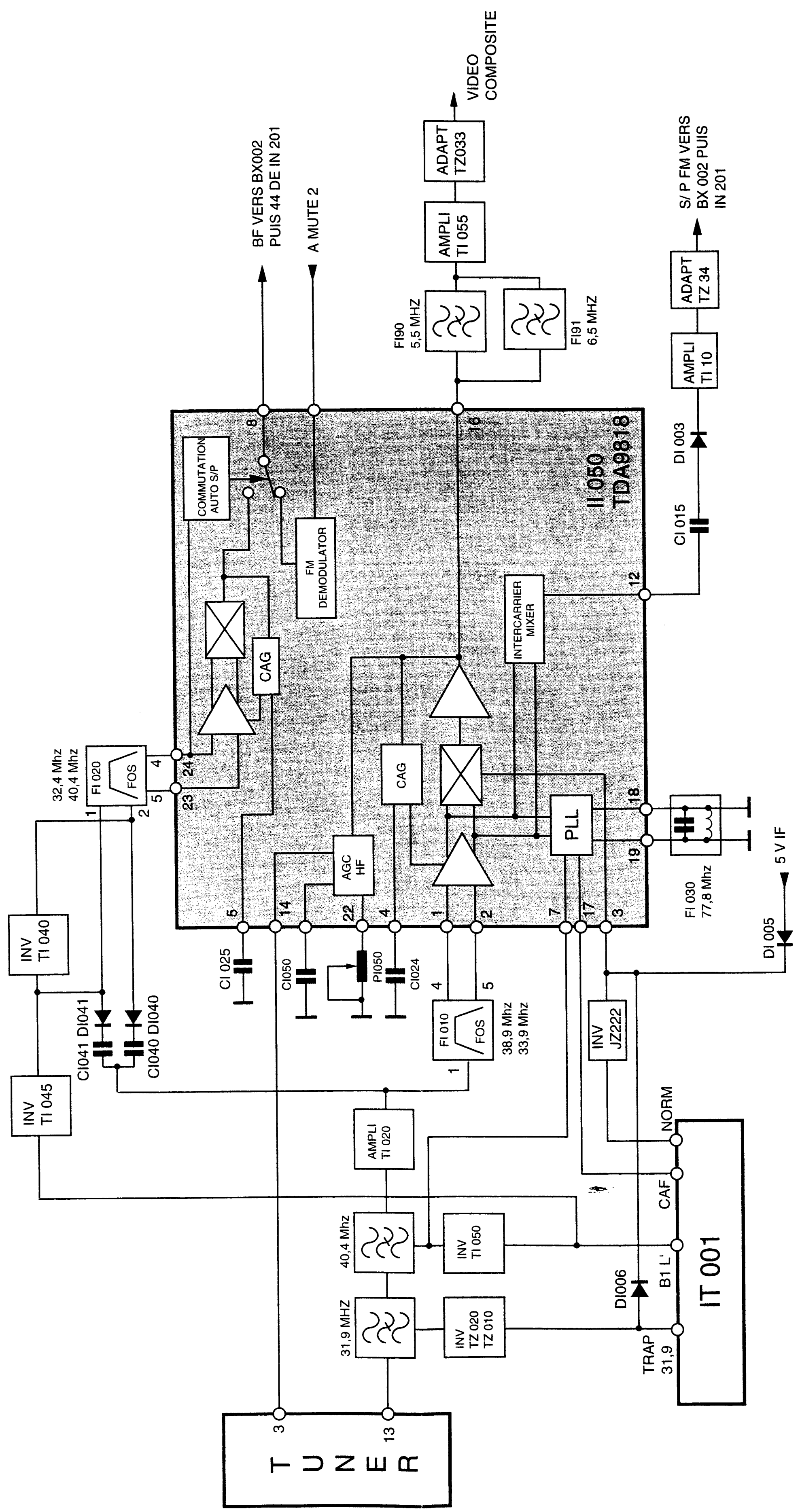
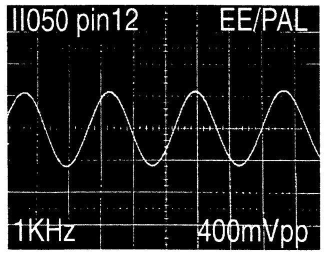
TUNER / IF SECTION - INTERFACE TUNER / FI - TUNER / ZF - TUNER / IF - INTERFAZ TUNER / IF

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


VIDEO COMPOSITE
ADAPT TZ033
AMPLI TI 055
FI90 5,5 MHZ
FI91 6,5 MHZ
BF VERS BX002 PUIS 44 DE IN 201
A MUTE 2
S/ P FM VERS BX 002 PUIS IN 201
ADAPT TZ 34
AMPLI TI 10
DI 003
CI 015
II 050 TDA9818
COMMUTATION AUTO S/P
FM DEMODULATOR
INTERCARRIER MIXER
CAG
CAG
AGC HF
PLL
FI 030 77,8 Mhz
5 V IF
DI 005
32,4 Mhz 40,4 Mhz
FI 020 FOS
INV TI 040
CI041 DI041
CI040 DI040
INV TI 045
CI 025
CI050
PI050
CI024
FI 010 FOS
38,9 Mhz 33,9 Mhz
INV JZ222
AMPLI TI 020
40,4 Mhz
INV TI 050
31,9 MHZ
INV TZ 020 TZ 010
NORM
CAF
B1 L'
DI006
TRAP 31,9
IT 001
TUNER
1
2
3
4
5
7
8
12
13
14
16
17
18
19
22
23
24

MEASUREMENTS TUNER / IF SECTION - MESURES INTERFACE TUNER / FI - MESSUNGEN TUNER / ZF - MISURE INTERFACCIA TUNER / IF - MEDIDAS INTERFAZ TUNER / IF

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
FE5100	1	2,6	2,6	2,6
	2	5	5	5
	3	3,1	3,1	3,1
	4	12	12	12
	5	NC	NC	NC
	6	NC	NC	NC
	7	12	12	12
	8	5,2	5,2	5,2
	9	32	32	32
	10	4,8	4,8	4,8
	11	4,5	4,5	4,5
	12	NC	NC	NC
	13	1,8	1,8	1,8
II050	1	3,3	3,3	3,3
	2	3,3	3,3	3,3
	3	0	0	0
	4	2,8	2,8	2,8
	5	2,6	2,6	2,6
	6	2,4	2,4	2,4
	7	3,5	3,5	3,5
	8	2,5	2,5	2,5
	9	2,3	2,3	2,3
	10	2,3	2,3	2,3
	11	1,6	1,6	1,6
	12	2	2	2
	13	2,7	2,7	2,7
	14	3,1	3,1	3,1
	15	1,9	1,9	1,9
	16	2,1	2,1	2,1
	17	4,4	4,4	4,4
	18	2,7	2,7	2,7
	19	2,7	2,7	2,7
	20	0	0	0
	21	4,8	4,8	4,8
	22	1,1	1,1	1,1
	23	3,2	3,2	3,2
	24	3,2	3,2	3,2
IS001	1	12	12	12
	2	0	0	0
	3	0	0	0
	4	4	4	4
	5	4,1	4,1	4,1
	6	4,1	4,1	4,1
	7	0	0	0
	8	4,1	4,1	4,1
	9	4,1	4,1	4,1
	10	4,1	4,1	4,1
	11	0	0	0
	12	0	0	0
	13	4,1	4,1	4,1
	14	4,1	4,1	4,1
	15	4,1	4,1	4,1
	16	4,1	4,1	4,1
	17	4,1	4,1	4,1
	18	0	0	0
	19	12	12	12
	20	12	12	12
	21	0	0	0
	22	0	0	0
	23	4,6	4,6	4,6
	24	0	0	0
TI010	B	5	5	5
	E	4,1	4,1	4,1
	C	0	0	0
TI011	B	1	1	1
	E	0,4	0,4	0,4
	C	2,7	2,7	2,7
TI020	B	1	1	1
	E	0,2	0,2	0,2
	C	4,8	4,8	4,8
TI040	B	2,1	2,1	2,1
	E	0	0	0
	C	0	0	0
TI045	B	0	0	0
	E	0	0	0
	C	2,1	2,1	2,1
TI050	B	0	0	0
	E	0	0	0
	C	3,5	3,5	3,5
TI055	B	2	2	2
	E	1,3	1,3	1,3
	C	4,8	4,8	4,8
TS004	B	0	0	0
	E	0	0	0
	C	4,6	4,6	4,6
TS030	B	12,1	12,1	12,1
	E	12,1	12,1	12,1
	C	12,1	12,1	12,1
TZ001	B	0	0	0
	E	0	0	0
	C	4,5	4,5	4,5
TZ010	B	0	0	0
	E	0	0	0
	C	2,7	2,7	2,7
TZ019	B	3	3	3
	E	0	0	0
	C	0	0	0
TZ020	B	0	0	0
	E	0	0	0
	C	2,7	2,7	2,7
TZ033	B	1,3	1,3	1,3
	E	2	2	2
	C	0	0	0
TZ034	B	2,7	2,7	2,7
	E	3,4	3,4	3,4
	C	0	0	0



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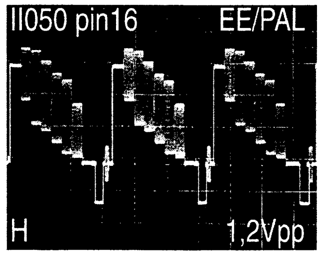

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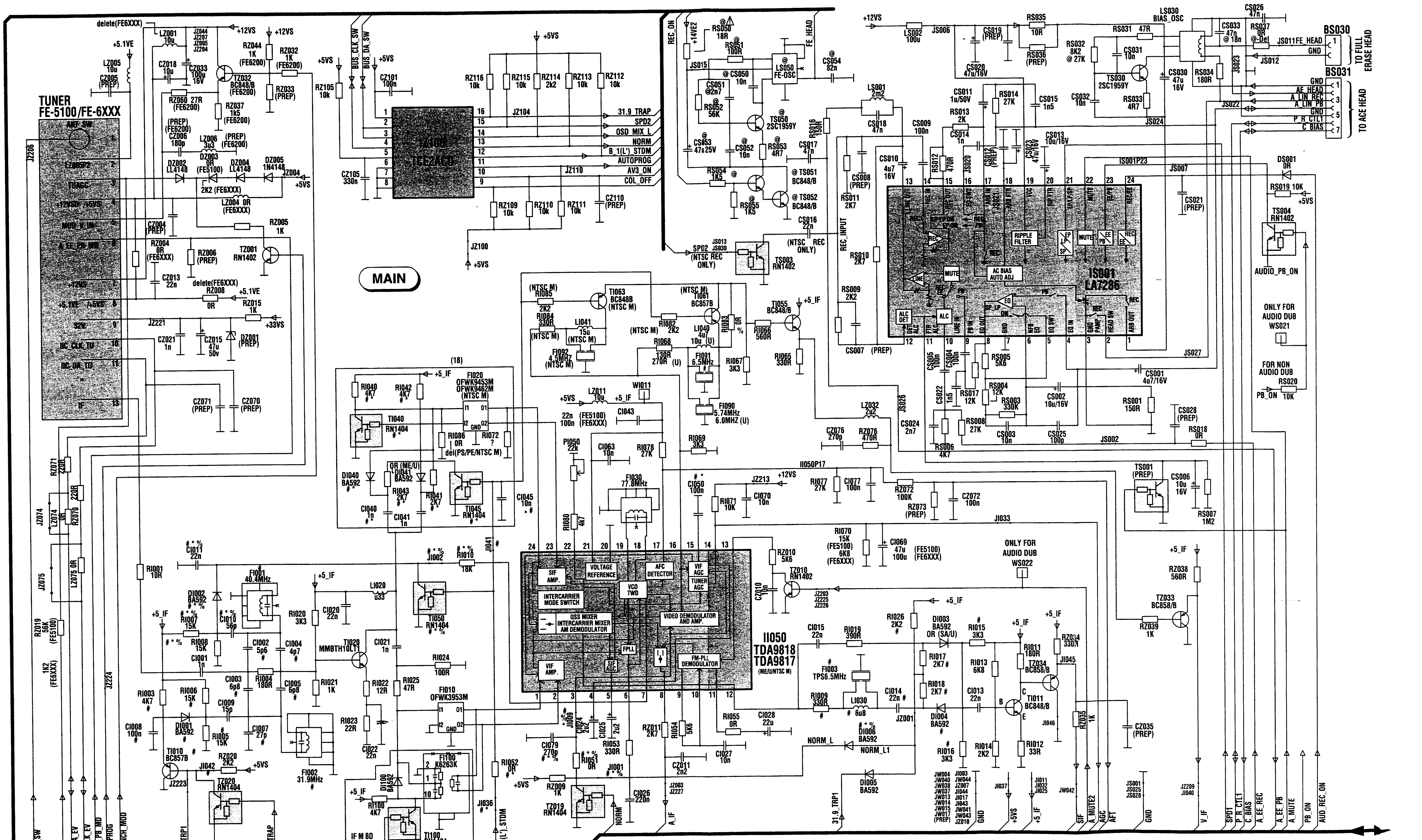
TUNER / IF SECTION - INTERFACE TUNER / FI - TUNER / ZF - TUNER / IF - INTERFAZ TUNER / IF

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TUNER
FE-5100/FE-6XXX
MAIN
IZ100
TEE2AED
II050
TDA9818
TDA9817
(ME/U/NTSC M)
IS001
LA7286
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
VCO TWD
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VIDEO DEMODULATOR AND AMP.
FPLL
VIF AMP.
FM-PLL DEMODULATOR
RIPPLE FILTER
AC BIAS AUTO ADJ
MUTE
ALC
ALC DET
BS030
BS031
TO FULL ERASE HEAD
TO ACE HEAD
FE_HEAD
GND
AE_HEAD
A_LIN_REC
A_LIN_PB
P_R_CTL1
C_BIAS
LS030
BIAS_OSC
LS050
FE-OSC
TS030
2SC1959Y
TS050
2SC1959Y
FI001
40.4MHz
FI002
31.9MHz
FI010
OFWK3953M
FI020
OFWK9453M
OFWK9462M
FI030
77.8MHz
FI090
5.74MHz
6.0MHZ (U)
FI091
6.5MHz
FI092
4.5MHz
(NTSC M)
FI003
TPS6.5MHz
FI100
K6263K
ONLY FOR AUDIO DUB
WS021
FOR NON AUDIO DUB
ONLY FOR AUDIO DUB
WS022
AUDIO_PB_ON
+12VS
+5VS
+5_IF
+33VS
+5.1VE
31.9_TRAP
SPD2
OSD_MIX_L
NORM
B_1(L')_STDM
AUTOPROG
AV3_ON
COL_OFF
ANT_SW
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_CINCH_MOD
31.9_TRP1
31.9_TRAP
IF M BD
(NTSC M)
B_1(L')_STDM
NORM
A_IF
GND
+5VS
+5_IF
SIF
A_MUTE2
AGC
AFT
GND
V_IF
SPD1
P_R_CTL1
C_BIAS
A_EE_REC
A_EE_PB
A_MUTE
PB_ON
AUD_REC_ON
REC_ON
BUS_CLK_SW
BUS_DA_SW
REC_INPUT

#: NOT USED IN U MODELS
*: NOT USED IN ME MODELS

$: NOT USED IN PS/PE MODELS
%: NOT USED IN NTSC M MODELS

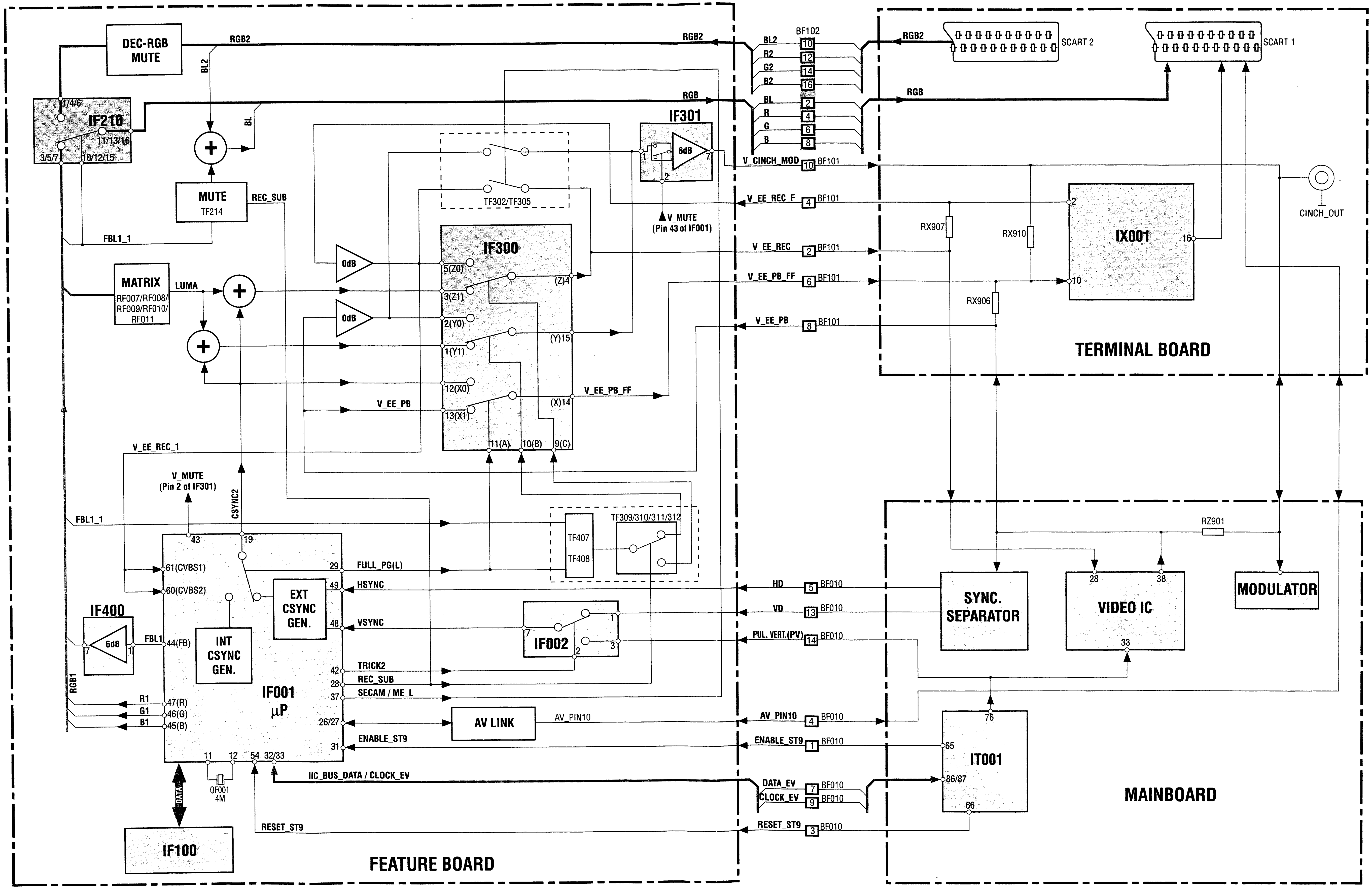
+: ONLY FOR FEATURE MODEL.
@: FOR AUDIO DUBBING MODELS

&: FOR WIDE RANGE POWER SUPPLY
~: USED IN ECO MODELS

MODEL\POS	DI005	FI091
PS/PE	BA592	6.5
SA/U	X	X
ME/FE	0R	6/6.5
NTSC M	0R	6/6.5

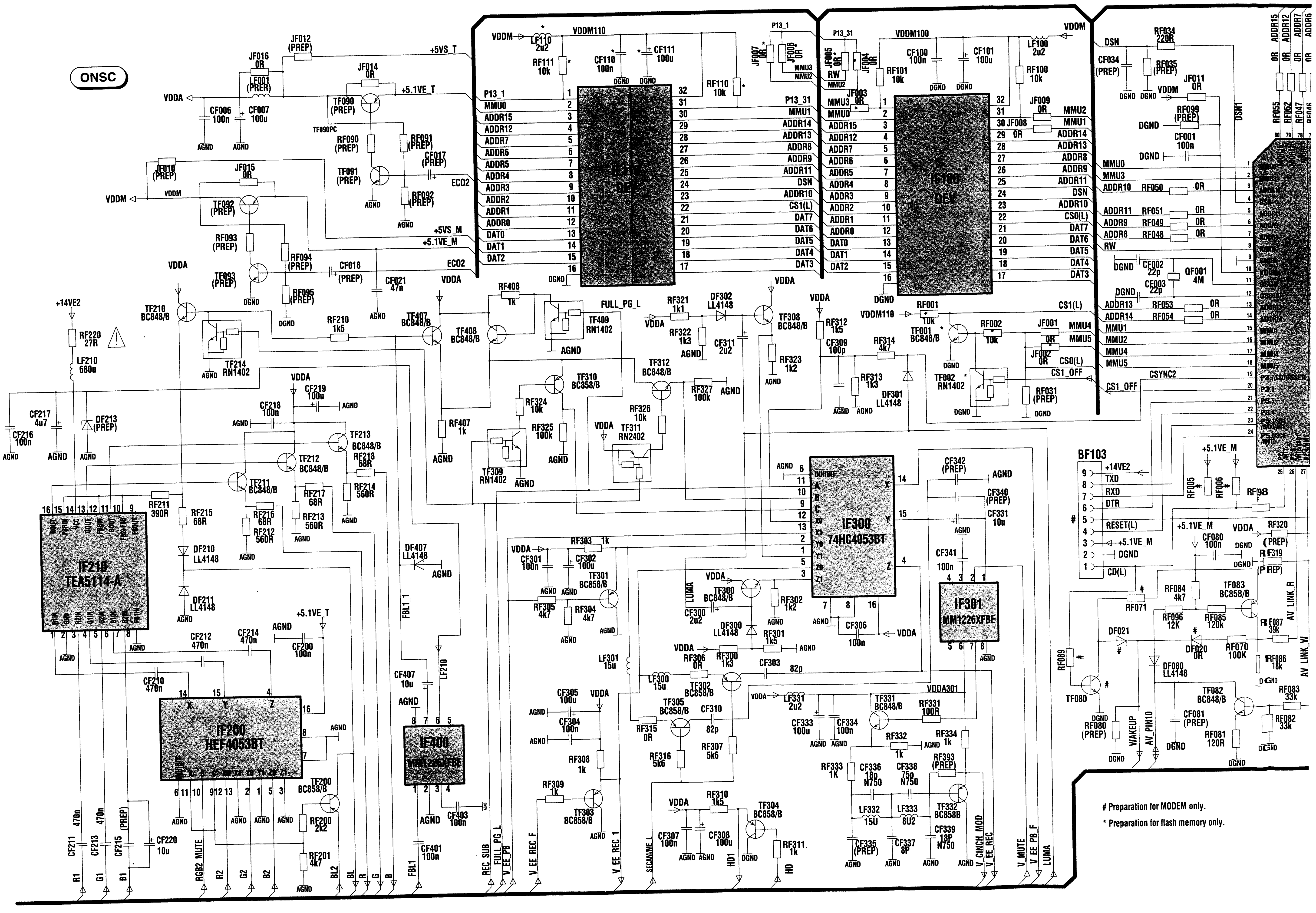
GRAPHIC BOARD - PLATINE GRAPHIQUE - LEITERPLATTE OSD - PIASTRA GRAFICA - PLATINA GRÁFICA

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


DEC-RGB MUTE
RGB2
BL2
IF210
1/4/6
11/13/16
3/5/7
10/12/15
BL
MUTE
TF214
REC_SUB
FBL1_1
MATRIX
RF007/RF008/RF009/RF010/RF011
LUMA
RGB
IF301
6dB
V_MUTE
(Pin 43 of IF001)
TF302/TF305
0dB
IF300
5(Z0)
3(Z1)
2(Y0)
1(Y1)
12(X0)
13(X1)
(Z)4
(Y)15
(X)14
11(A)
10(B)
9(C)
V_EE_PB
V_EE_PB_FF
V_EE_REC_1
V_MUTE
(Pin 2 of IF301)
CSYNC2
FBL1_1
TF309/310/311/312
TF407
TF408
IF400
6dB
FBL1
44(FB)
43
19
61(CVBS1)
60(CVBS2)
INT CSYNC GEN.
EXT CSYNC GEN.
29
FULL_PG(L)
49
HSYNC
48
VSYNC
IF002
42
TRICK2
28
REC_SUB
37
SECAM / ME_L
26/27
AV LINK
AV_PIN10
31
ENABLE_ST9
IF001
µP
RGB1
R1
G1
B1
47(R)
46(G)
45(B)
11
12
54
32/33
QF001
4M
IIC_BUS_DATA / CLOCK_EV
DATA
IF100
RESET_ST9
FEATURE BOARD
BF102
BL2
R2
G2
B2
BL
R
G
B
10
12
14
16
2
4
6
8
V_CINCH_MOD
BF101
V_EE_REC_F
V_EE_REC
V_EE_PB_FF
V_EE_PB
HD
VD
PUL. VERT.(PV)
BF010
5
13
14
AV_PIN10
ENABLE_ST9
DATA_EV
CLOCK_EV
RESET_ST9
4
1
7
9
3
SCART 2
SCART 1
RGB2
RGB
RX907
RX910
RX906
IX001
16
10
CINCH_OUT
TERMINAL BOARD
RZ901
SYNC. SEPARATOR
VIDEO IC
28
38
33
MODULATOR
IT001
76
65
86/87
66
MAINBOARD

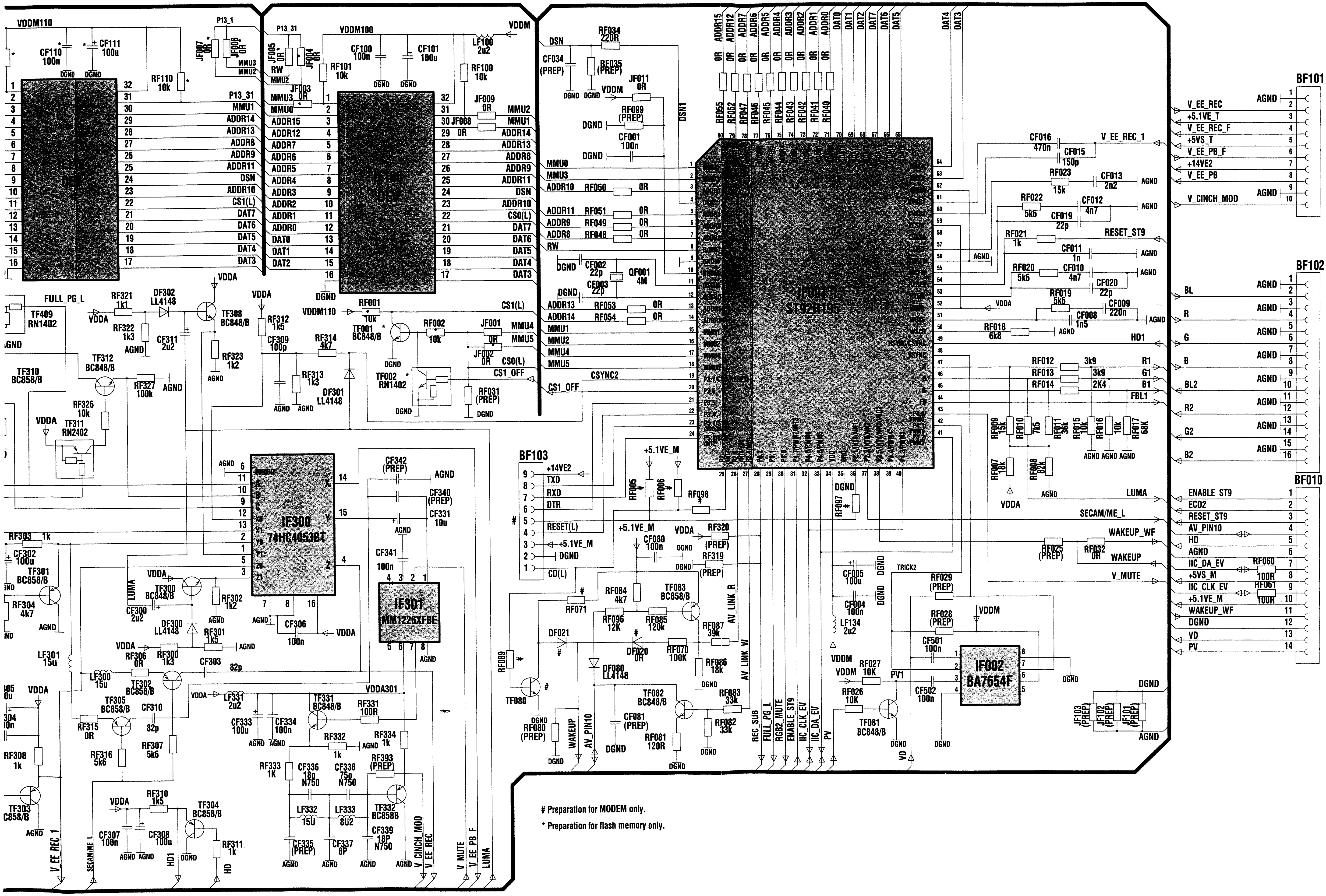
GRAPHIC BOARD - PLATINE GRAPHIQUE - LEITERPLATTE OSD - PIASTRA GRAFICA - PLATINA GRÁFICA

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


ONSC
IF110 DEV
IF100 DEV
IF210 TEA5114-A
IF200 HEF4053BT
IF400 MM1226XFBE
IF300 74HC4053BT
IF301 MM1226XFBE
BF103
VDDA
VDDM
VDDM110
VDDM100
+14VE2
+5.1VE_T
+5.1VE_M
+5VS_T
+5VS_M
AGND
DGND
ECO2
P13_1
P13_31
MMU0
MMU1
MMU2
MMU3
MMU4
MMU5
DSN
RW
CS0(L)
CS1(L)
CS1_OFF
CSYNC2
TXD
RXD
DTR
RESET(L)
CD(L)
FULL_PG_L
LUMA
WAKEUP
AV_PIN10
AV_LINK_R
AV_LINK_W
R1
G1
B1
RGB2_MUTE
R2
G2
B2
BL2
BL
R
G
B
FBL1
FBL1_1
RED_SUB
V_EE_PB
V_EE_REC_F
V_EE_REC_1
SECAM/ME_L
HD1
HD
V_CINCH_MOD
V_EE_REC
V_MUTE
V_EE_PB_F

Preparation for MODEM only.

* Preparation for flash memory only.


IF001
ST92R195
IF100
IF300
74HC4053BT
IF301
MM1226XFBE
IF002
BA7654F
QF001
4M
BF101
TO TERMINAL BOARD
BF102
TO TERMINAL BOARD
BF010
TO MAIN BOARD
BF103
VDDM110
VDDM100
VDDM
VDDA
DGND
AGND
V_EE_REC
+5.1VE_T
V_EE_REC_F
+5VS_T
V_EE_PB_F
+14VE2
V_EE_PB
V_CINCH_MOD
BL
R
G
B
BL2
R2
G2
B2
ENABLE_ST9
ECO2
RESET_ST9
AV_PIN10
HD
AGND
IIC_DA_EV
+5VS_M
IIC_CLK_EV
+5.1VE_M
WAKEUP_WF
DGND
VD
PV
LUMA
SECAM/ME_L
WAKEUP
V_MUTE
TXD
RXD
DTR
RESET(L)
CD(L)
REC_SUB
FULL_PG_L
RGB2_MUTE
AV_LINK_R
AV_LINK_W
V_EE_REC_1
HD1
FBL1
CSYNC2
CS1_OFF
TRICK2

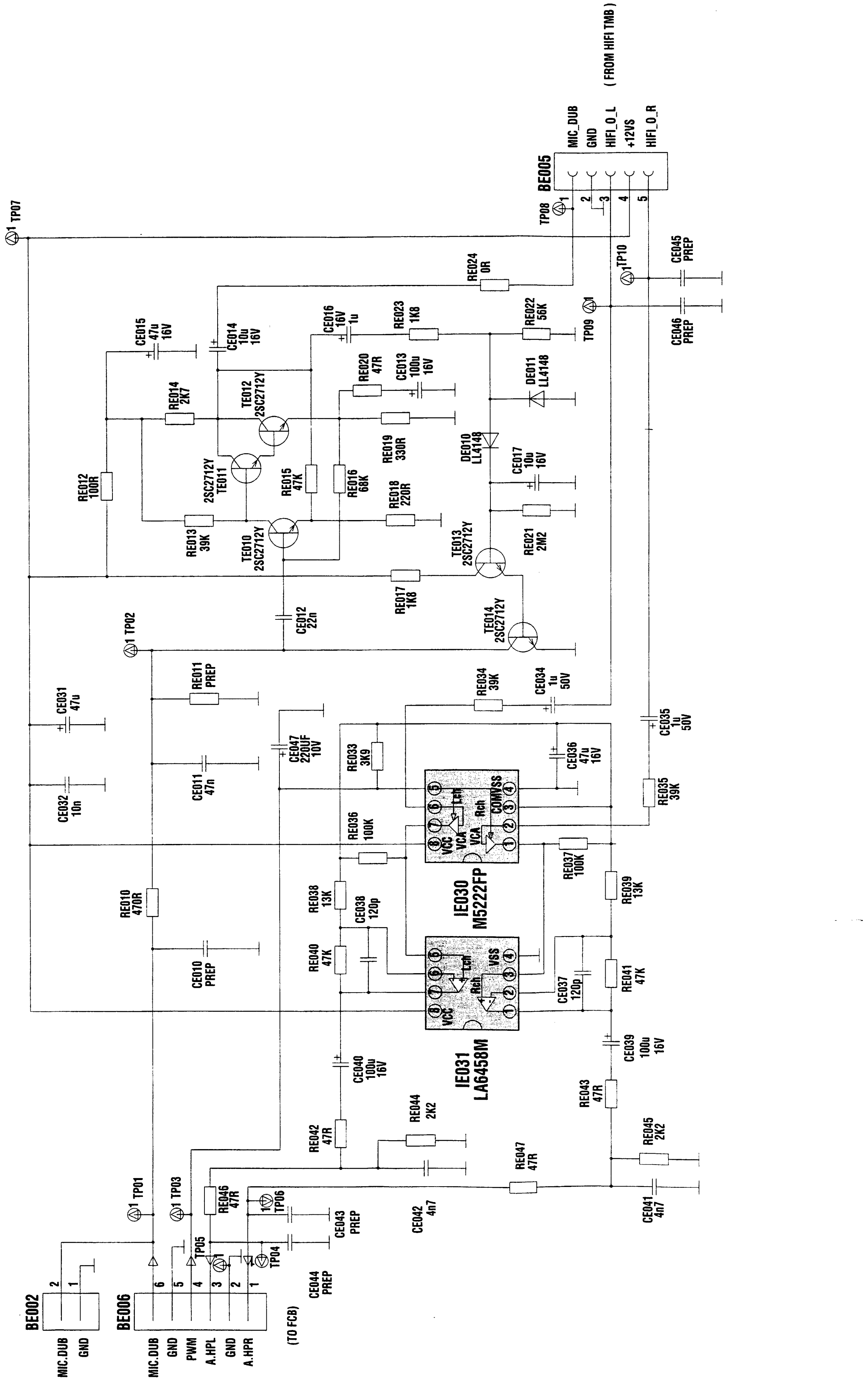
Preparation for MODEM only.

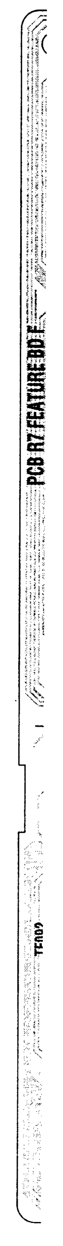
* Preparation for flash memory only.

MEASUREMENTS GRAPHIC BOARD - MESURES PLATINE GRAPHIQUE -
MESSUNGEN LEITERPLATTE OSD - MISURE PIASTRA GRAFICA - MEDIDAS PLATINA GRÁFICA

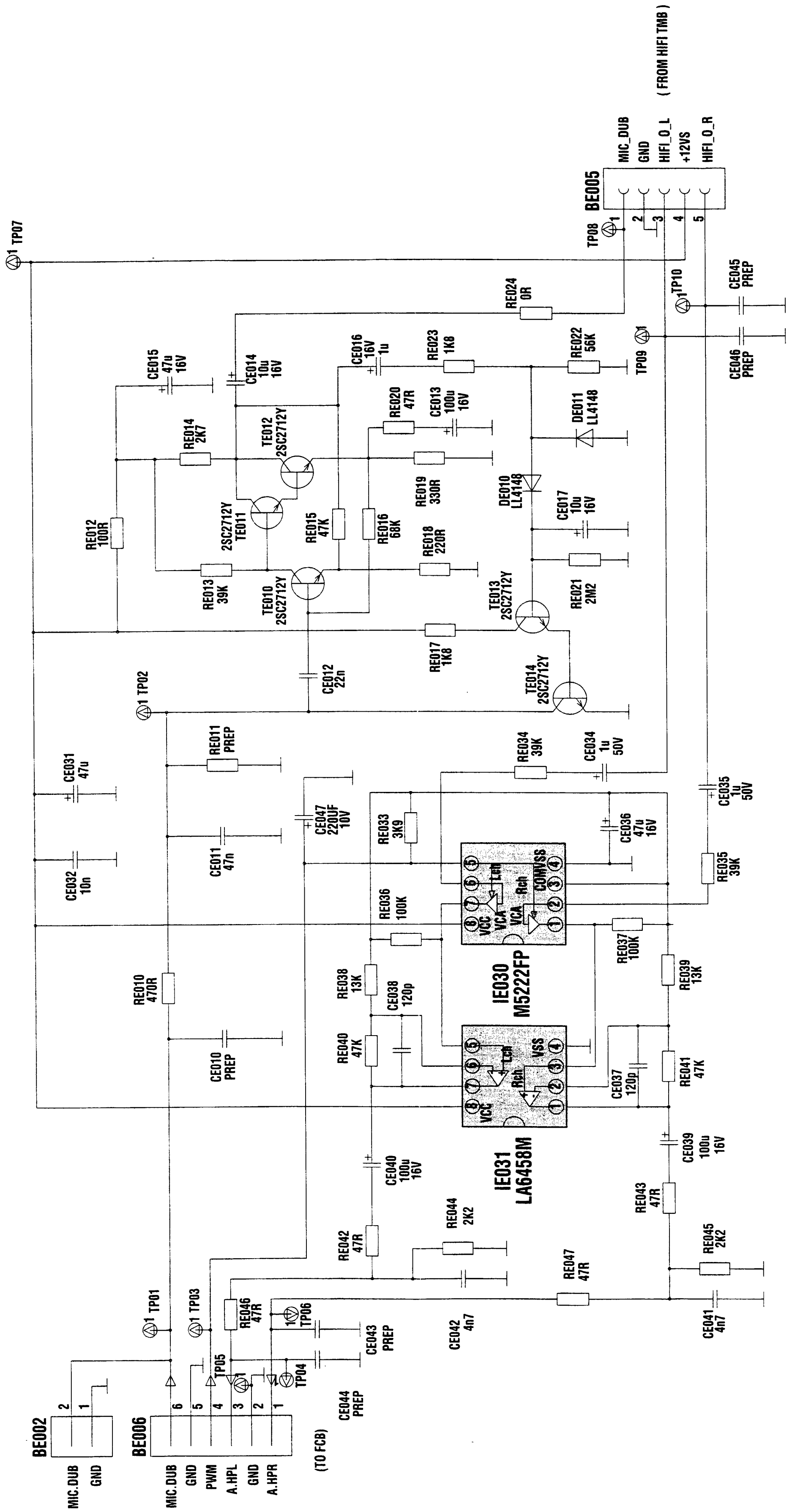
OSD		MODE		
LOC	PIN	EE	PLAY	REC.
IF001	1	0,3	0,3	0,3
	2	0	0	0
	3	3,2	2,7	2,9
	4	3,7	3,7	3,7
	5	0,9	0,9	0,9
	6	3	3	3
	7	1,8	2,2	2
	8	5,2	5,2	5,2
	9	0	0	0
	10	5,2	5,2	5,2
	11	2,1	2,1	2,1
	12	2,2	2,2	2,2
	13	0,2	0,2	0,2
	14	0,6	0,4	0
	15	0	0	0
	16	0	0	0
	17	0	0	0
	18	0	0	0
	19	5	5	0
	20	0	0	0
	21	0	0	0
	22	0	0	0
	23	0	0	0
	24	0	0	0
	25	0	0	0
	26	0	0	0
	27	0	0	0
	28	0	0	0
	29	5	5	5
	30	5	4,9	0
	31	2,1	2,1	2,1
	32	3,6	3,6	3,4
	33	3,5	3,6	3,5
	34	5,2	5,2	5,2
	35	0	0	0
	36	0	0	0
	37	0	0	0
	38	0	0	0
	39	1,9	0	0,4
	40	3,6	3,6	3,6
	41	3,1	3,6	3,4
	42	0	0	0
	43	0	0	0
	44	0,7	0,7	0,7
	45	0,7	0,7	0,7
	46	0,2	0,2	0
	47	0,2	0,2	0,1
	48	4,2	4,2	4,2
	49	4,2	4,2	4,2
	50	0,9	0,6	0,9
	51	1	0,6	1
	52	5,1	5,1	5,1
	53	1,9	1,9	1,9
	54	5,1	5	5
	55	2	2	2
	56	0	0	0
	57	2	2	2
	58	0,2	0,5	0,1
	59	5,1	5,1	5,1
	60	0,2	0,4	0,1
	61	1,3	1,1	1,2
	62	0	0	0
	63	2,9	2,7	2,8
	64	2,6	2,5	2,5
	65	3,3	3,2	3,2
	66	2,8	2,8	2,8
	67	3,9	3,7	3,7
	68	3,6	3,4	3,4
	69	2,7	2,7	2,8
	70	3,2	3,2	3,2
	71	2,4	2,5	2,5
	72	2,4	2,5	2,5
	73	2,5	2,5	2,4
	74	2,6	2,6	2,5
	75	2,6	2,6	2,6
	76	2,6	2,6	2,6
	77	2	2,1	2,1
	78	1,9	2,4	2,2
	79	1,7	1,7	1,7
	80	0,3	0,4	0,3
IF002	1	3,3	3,3	3,3
	2	0	0	0
	3	1,7	1,7	1,7
	4	0	0	0
	5	1,7	1,7	1,7
	6	5,2	5,2	5,2
	7	4,2	4,2	4,2
	8	0	0	0
IF200	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	0	0	0
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	4,9	4,9	4,9
	10	4,9	4,9	4,9
	11	4,9	4,9	4,9
	12	0	0	0
	13	0	0	0
	14	0	0	0
	15	0	0	0
	16	5,1	5,1	5,1
IF210	1	3,6	3,6	3,6
	2	0	0	0
	3	3,6	3,6	3,6
	4	3,6	3,6	3,6
	5	3,7	3,7	3,7
	6	3,6	3,6	3,6
	7	4,2	4,2	4,2
	8	0	0	0
	9	0,4	0,4	0,4
	10	0,5	0,5	0,5
	11	3,1	3,1	3,1
	12	0,5	0,5	0,5
	13	3,1	3,1	3,1
	14	12,9	12,6	12,6
	15	0,5	0,5	0,5
	16	3	3	3
IF300	1	1,8	1,8	1,8
	2	1,8	1,8	1,8
	3	1,8	1,8	1,8
	4	1,9	1,9	1,9
	5	1,9	1,9	1,9
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	0	0	0
	10	1,4	1,4	1,4
	11	5	5	5
	12	2,7	2,7	2,7
	13	2,6	2,1	2,3
	14	2,6	2,1	2,3
	15	1,9	1,8	1,8
	16	5,1	5,1	5,1
IF301	1	1,8	1,6	1,7
	2	0	0	0
	3	1,3	1,3	1,3
	4	0	0	0
	5	0	0	0
	6	5,1	5,1	5,1
	7	2,4	2,1	2,1
	8	0	0	0
IF400	1	3,8	3,8	3,8
	2	0	0	0
	3	3,1	3	3
	4	0	0	0
	5	0	0	0
	6	12,9	12,6	12,6
	7	4,6	4,6	4,5
	8	0	0	0

AMPLIFIER HEADPHONE/MICROPHONE - AMPLIFICATEUR CASQUE/MICRO - VERSTÄRKERPLATTE KOPFHÖRER/MIKROFON - MICROFONO/AMPLIFICATORE CUFFIA - AMPLIFICADOR AURICULARES/MICRÓFONO

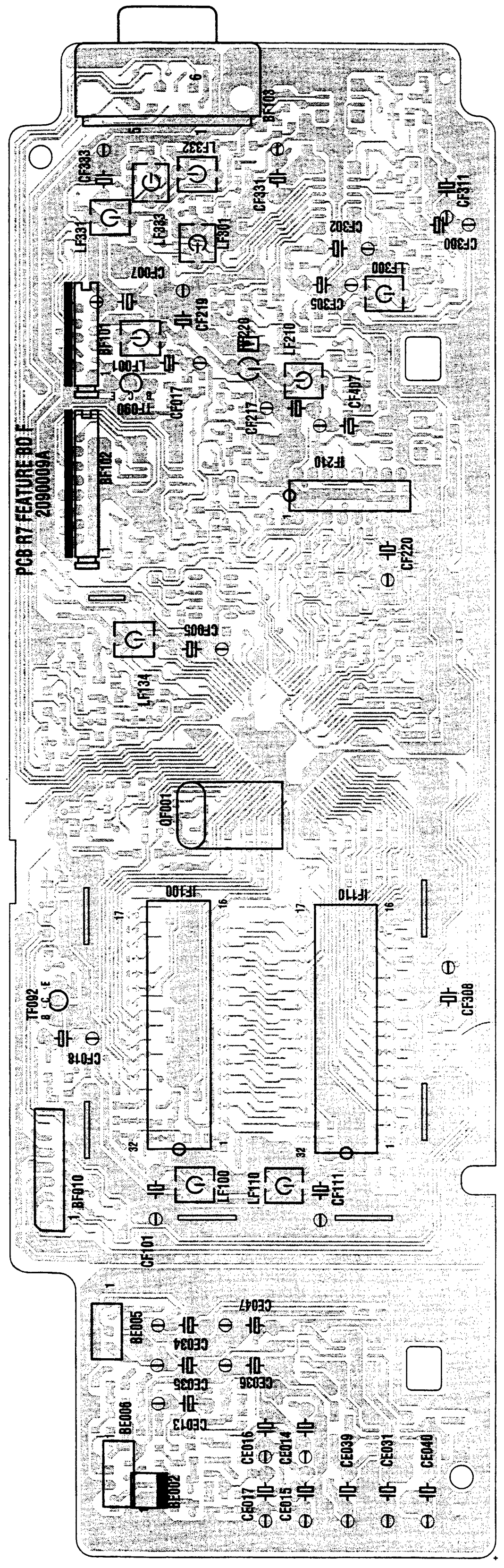

BE005
MIC_DUB
GND
HIFI_O_L
+12VS
HIFI_O_R
(FROM HIFI TMB)
TP07
TP08
TP09
TP10
TP01
TP02
TP03
TP04
TP05
TP06
IE030
M5222FP
IE031
LA6458M
VCC
VCA
Lch
Rch
COMVSS
VSS
TE010 2SC2712Y
TE011 2SC2712Y
TE012 2SC2712Y
TE013 2SC2712Y
TE014 2SC2712Y
DE010 LL4148
DE011 LL4148
BE002
MIC.DUB
GND
BE006
MIC.DUB
GND
PWM
A.HPL
GND
A.HPR
(TO FCB)


PCB R7 FEATURE BD F

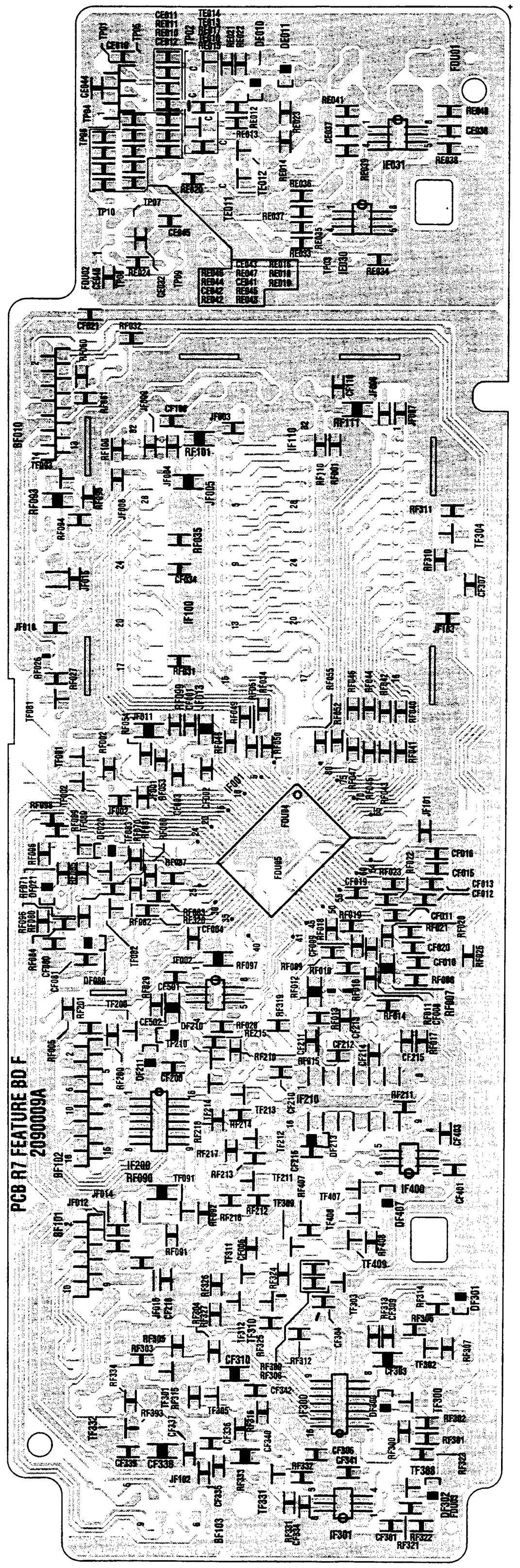
AMPLIFIER HEADPHONE/MICROPHONE - AMPLIFICATEUR CASQUE/MICRO - VERSTÄRKERPLATTE KOPFHÖRER/MIKROFON - MICROFONO/AMPLIFICATORE CUFFIA - AMPLIFICADOR AURICULARES/MICRÓFONO


BE005
MIC_DUB
GND
HIFI_O_L
+12VS
HIFI_O_R
(FROM HIFI TMB)
TP07
TP08
TP09
TP10
TP01
TP02
TP03
TP04
TP05
TP06
CE045 PREP
CE046 PREP
RE024 0R
RE022 56K
RE023 1K8
CE016 1u 16V
CE015 47u 16V
CE014 10u 16V
RE014 2K7
TE012 2SC2712Y
TE011 2SC2712Y
RE012 100R
RE013 39K
TE010 2SC2712Y
RE015 47K
RE016 68K
RE020 47R
CE013 100u 16V
RE019 330R
RE018 220R
DE011 LL4148
DE010 LL4148
CE017 10u 16V
TE013 2SC2712Y
RE021 2M2
RE017 1K8
CE012 22n
TE014 2SC2712Y
RE011 PREP
CE031 47u
CE032 10n
CE011 47n
CE047 220UF 10V
RE033 3K9
RE034 39K
CE034 1u 50V
CE036 47u 16V
CE035 1u 50V
RE035 39K
RE036 100K
RE037 100K
IE030 M5222FP
RE038 13K
CE038 120p
RE039 13K
RE010 470R
CE010 PREP
RE040 47K
RE041 47K
CE037 120p
IE031 LA6458M
CE040 100u 16V
CE039 100u 16V
RE044 2K2
RE043 47R
RE042 47R
RE045 2K2
RE047 47R
RE046 47R
CE043 PREP
CE042 4n7
CE041 4n7
CE044 PREP
BE002
MIC.DUB
GND
BE006
MIC.DUB
GND
PWM
A.HPL
GND
A.HPR
(TO FCB)

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB R7 FEATURE BD F
2090009A

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

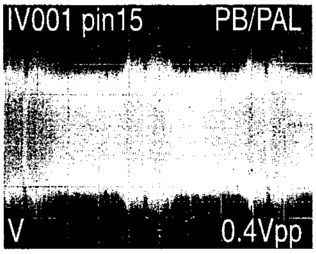

PCB R7 FEATURE BD F
2090009A

MEASUREMENTS VIDEO SIGNAL PROCESSING - MESURES TRAITEMENT VIDEO - MESSUNGEN VIDEO SIGNALVERARBEITUNG - MISURE ELABORAZIONE VIDEO - MEDIDAS TRATAMIENTO VIDEO

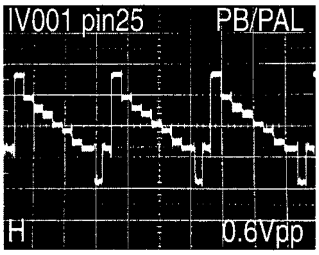
VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
IV001	1	NC	NC	NC
	2	0	0	0
	3	NC	NC	NC
	4	NC	NC	NC
	5	NC	NC	NC
	6	NC	NC	NC
	7	NC	NC	NC
	8	NC	NC	NC
	9	NC	NC	NC
	10	NC	NC	NC
	11	NC	NC	NC
	12	2,3	2,3	2,3
	13	1,6	1,8	1,6
	14	2,7	0	2,5
	15	4,1	3,1	4,1
	16	1,5	1,5	1,5
	17	2,4	2,4	2,4
	18	1,9	1,9	1,9
	19	0,3	0,5	4
	20	4,5	2,5	4,4
	21	0	4,1	0
	22	15	1,6	1,5
	23	NC	NC	NC
	24	2,4	0	2,4
	25	1,7	1,8	1,8
	26	3	3	3
	27	0	0	0
	28	2	1,2	2
	29	2,2	2,4	2,2
	30	1,7	0	1,7
	31	4	4	4
	32	1,7	0	1,7
	33	0,2	0,2	0,2
	34	2,1	1,9	2,1
	35	3	3	3
	36	4,8	4,8	4,8
	37	0,6	0,6	0,6
	38	1,8	1,8	1,8
	39	3	3	3
	40	3	3	3
	41	5	5	5
	42	1,9	1,9	1,9
	43	0	0	0
	44	1,6	1,6	1,6
	45	1,8	1,8	1,8
	46	0	1,8	0
	47	5	5	5
	48	2,7	2,7	2,7
	49	0	0	4
	50	2,7	2,7	2,7
	51	3,9	3,9	3,9
	52	3,1	3,1	3,1
	53	0	0	0
	54	2,1	2,1	2,1
	55	3,9	2,8	3,9
	56	2,4	2,4	2,4
	57	0	0	0
	58	1,4	2,7	1,4
	59	1,5	1,5	1,5
	60	0,6	0,6	0,6
	61	0	2,9	2,9
	62	4,1	4,1	4,1
	63	4,1	4,1	4,1
	64	3,9	3,9	3,9
	65	1,5	1,5	1,5
	66	0,4	0,4	0,4

VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
	67	0,4	0,4	0,4
	68	NC	NC	NC
	69	2,1	2,1	2,1
	70	NC	NC	NC
	71	NC	NC	NC
	72	NC	NC	NC
	73	NC	NC	NC
	74	NC	NC	NC
	75	NC	NC	NC
	76	5	5	5
	77	NC	NC	NC
	78	4	4	4
	79	NC	NC	NC
	80	NC	NC	NC
IV100	1	2,5	2,5	2,5
	2	5	5	5
	3	2,5	2,5	2,5
	4	0	0	0
	5	2,3	2,3	2,3
	6	0	0	0
	7	1,5	1,5	1,5
	8	9	9	9
	9	2	2	2
	10	0,8	0,8	0,8
	11	0	0	0
	12	0	0	0
	13	1,9	1,9	1,9
	14	0	0	0
IV401	1	1,6	1,6	1,6
	2	0,1	0,1	0,1
	3	1,5	1,5	1,5
	4	NC	NC	NC
	5	NC	NC	NC
	6	5	5	5
	7	2,2	2,2	2,2
	8	0	0	0
IV500	1	0	0	0
	2	2,3	2,3	2,3
	3	2,9	2,9	2,9
	4	3,6	3,6	3,6
	5	4,1	4,1	4,1
	6	0	0	0
	7	4,6	4,6	4,6
	8	4,7	4,7	4,7
	9	3,7	3,7	3,7
	10	3,8	3,8	3,8
	11	2,6	2,6	2,6
	12	2,1	2,1	2,1
	13	4,8	4,8	4,8
	14	0	0	0
TV001	B	2,4	2,4	2,4
	E	1,7	1,7	1,7
	C	3	3	3
TV002	B	0	0	0
	E	0	0	0
	C	0	0	0
TV003	B	3,2	3,2	3,2
	E	2,5	2,5	2,5
	C	5	5	5

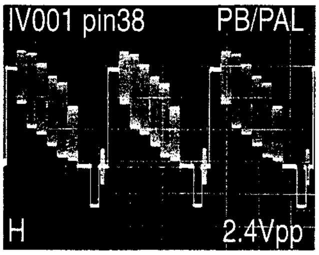
VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
TV004	B	1,7	1,7	1,7
	E	1	1	1
	C	3,2	3,2	3,2
TV005	B	1,8	1,8	1,8
	E	2,4	2,4	2,4
	C	0	0	0
TV008	B	1,2	1,2	1,2
	E	0,6	0,6	0,6
	C	5	5	5
TV009	B	5	5	0
	E	5	5	5
	C	1,9	1,9	5
TV010	B	0,4	0,4	3,9
	E	0	0	0
	C	5	5	0
TV012	B	1,2	1,9	1,9
	E	1,3	1,3	1,3
	C	5	5	5
TV013	B	1,5	1,5	1,5
	E	2,1	2,1	2,1
	C	0	0	0
TV014	B	1,8	1,8	1,8
	E	1,2	1,2	1,2
	C	5	5	5
TV401	B	4,1	4,1	4,1
	E	1,8	1,8	1,8
	C	0	0	0
TV402	B	2,2	2,2	2,2
	E	1,5	1,5	1,5
	C	5	5	5
TV403	B	1,5	1,5	1,5
	E	2,2	2,2	2,2
	C	0	0	0
TV404	B	4,1	4,1	4,1
	E	0	0	0
	C	0	0	0
TV405	B	0,9	0,9	0,9
	E	1,6	1,6	1,6
	C	0	0	0
TX350	B	0	5	0
	E	0	0	0
	C	13,8	0	13,8
TX351	B	13,8	0	13,2
	E	13,9	26	13,3
	C	0	126	0
TX352	B	0	0	0
	E	0	0	0
	C	0	6	0


IV001 pin15
PB/PAL
V
0.4Vpp

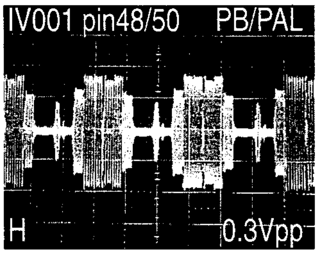
①


IV001 pin25
PB/PAL
H
0.6Vpp

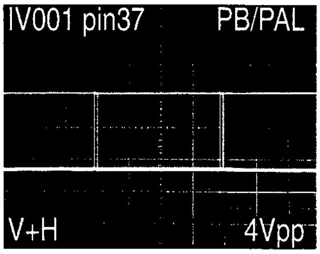
②


IV001 pin38
PB/PAL
H
2.4Vpp

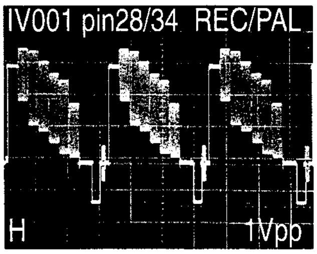
③


IV001 pin48/50
PB/PAL
H
0.3Vpp

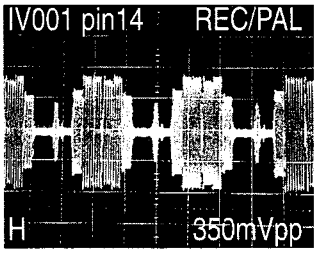
④


IV001 pin37
PB/PAL
V+H
4Vpp

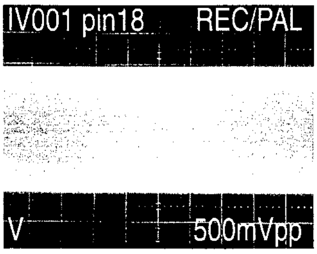
⑤


IV001 pin28/34
REC/PAL
H
1Vpp

⑥


IV001 pin14
REC/PAL
H
350mVpp

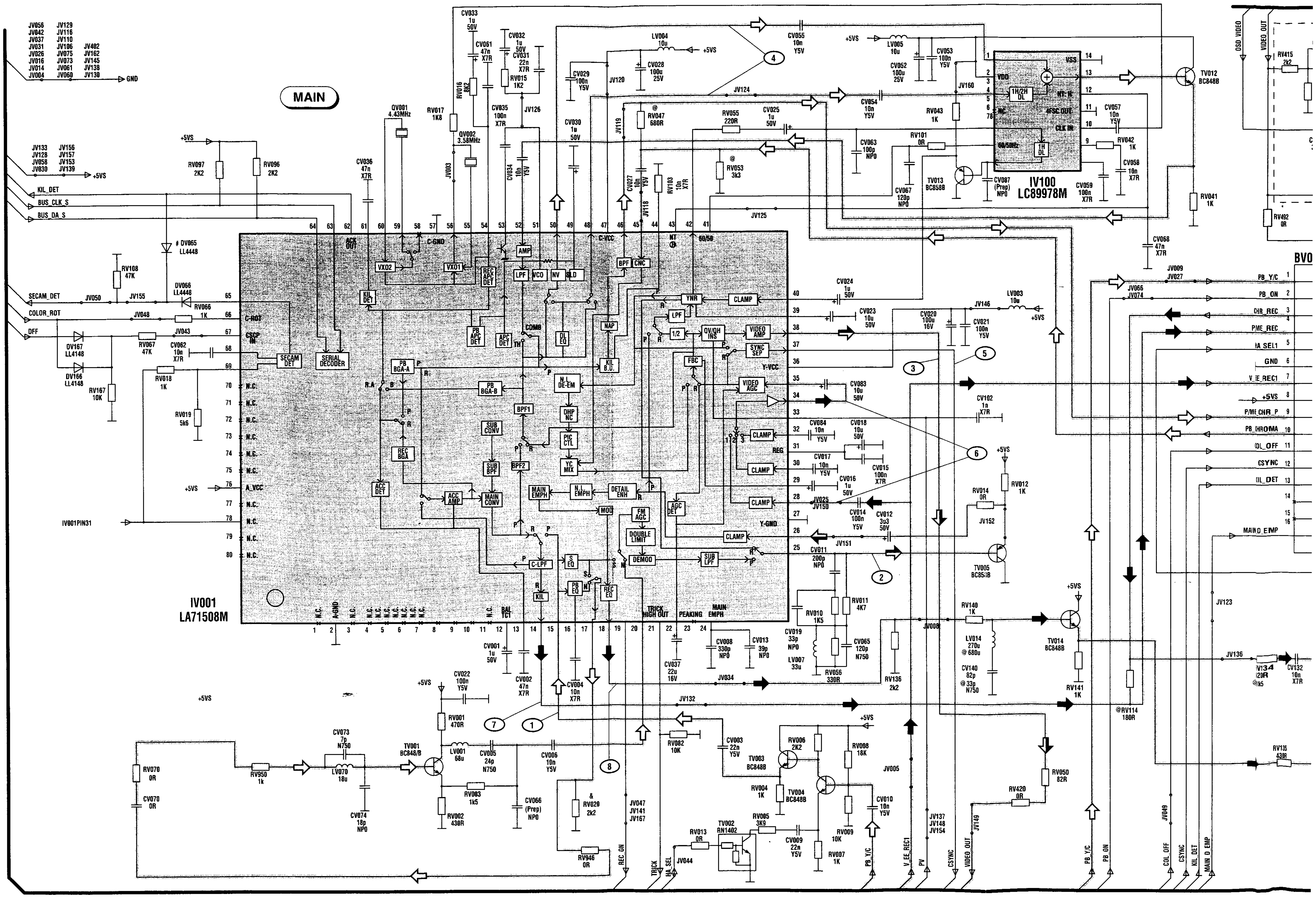
⑦


IV001 pin18
REC/PAL
V
500mVpp

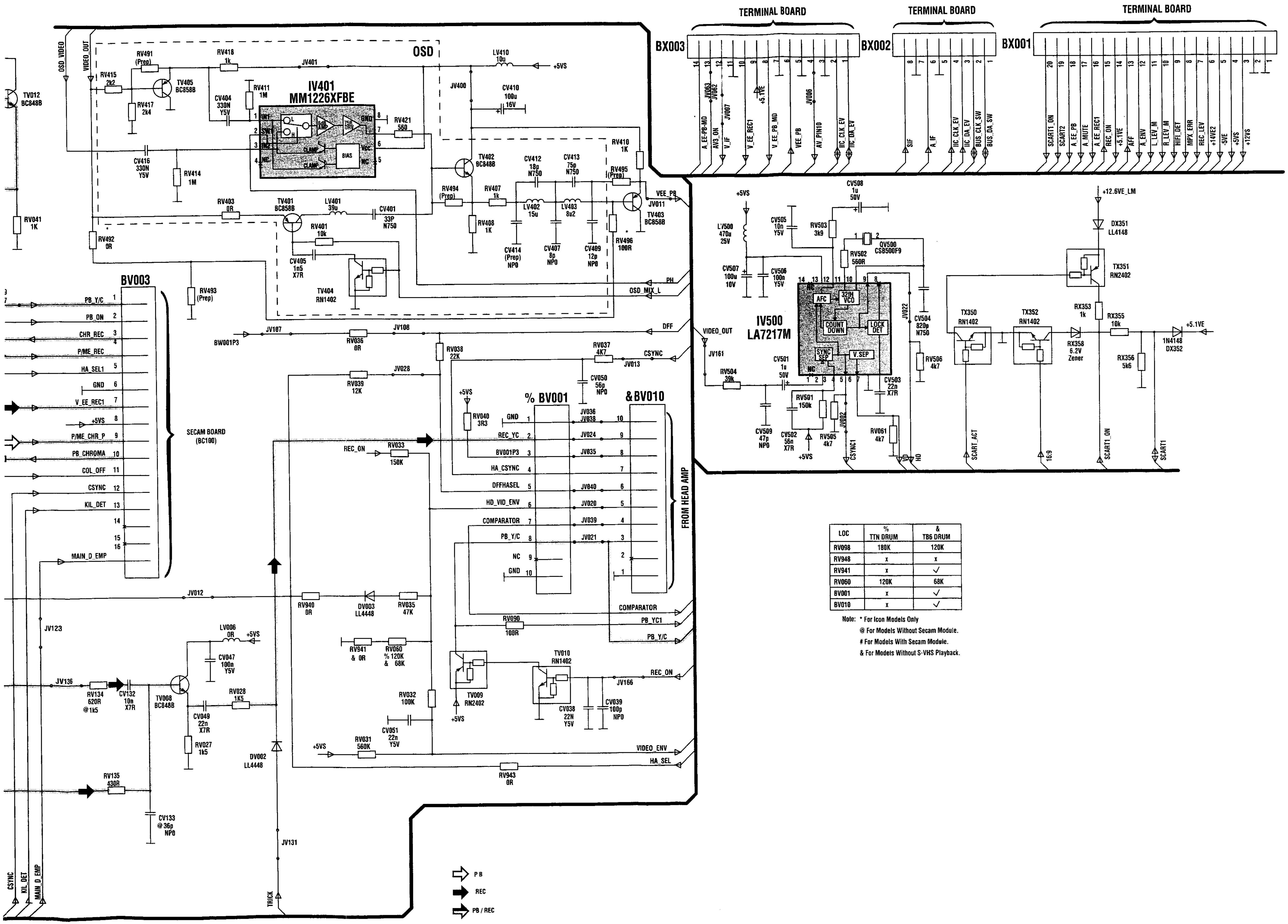
⑧

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


MAIN
IV001
LA71508M
IV100
LC89978M
GND
+5VS
KIL_DET
BUS_CLK_S
BUS_DA_S
SECAM_DET
COLOR_ROT
OFF
IV001PIN31
DV065 LL4448
DV066 LL4448
DV167 LL4148
DV166 LL4148
RV108 47K
RV066 1K
RV067 47K
CV062 10n X7R
RV018 1K
RV019 5k6
RV167 10K
RV097 2K2
RV096 2K2
QV001 4.43MHz
QV002 3.58MHz
RV017 1K8
RV016 8K2
CV033 1u 50V
CV061 47n X7R
CV032 1u 50V
CV031 22n X7R
RV015 1K2
CV035 100n X7R
CV036 47n X7R
CV034 10n Y5V
CV029 100n Y5V
CV028 100u 25V
LV004 10u
CV030 1u 50V
RV047 680R
RV055 220R
CV025 1u 50V
RV053 3k3
CV027 10n Y5V
RV103 10n X7R
CV055 10n Y5V
LV005 10u
CV052 100u 25V
CV053 100n Y5V
CV054 10n Y5V
CV063 100p NP0
CV067 120p NP0
RV043 1K
RV101 0R
TV013 BC858B
CV087 (Prep) NP0
CV057 10n Y5V
RV042 1K
CV058 10n X7R
CV059 100n X7R
TV012 BC848B
RV041 1K
RV415 2k2
RV492 0R
CV068 47n X7R
VDD
VSS
1H/2H DL
NT-N
NC
4FSC OUT
CLK IN
60/50Hz
1H DL
C-GND
C-VCC
ACK OUT
VXO2
VXO1
REC APC DET
AMP
LPF
VCO
NV
SLD
BPF
CNC
NT
60/50
KIL DET
PB APC DET
APC DET
COMB
DL EQ
NAP
YNR
CLAMP
LPF
1/2
QV/QH INS
VIDEO AMP
SYNC SEP
FBC
Y-VCC
VIDEO AGC
SECAM DET
SERIAL DECODER
C-ROT
CSCP IN
PB BGA-A
PB BGA-B
KIL B.U.
N.L DE-EM
DHP NC
PIC CTL
YC MIX
BPF1
BPF2
SUB CONV
SUB BPF
REC BGA
ACC DET
ACC AMP
MAIN CONV
MAIN EMPH
N.L EMPH
DETAIL ENH
MOD
FM AGC
DOUBLE LIMIT
DEMOD
AGC DET
SUB LPF
Y-GND
C-LPF
S EQ
PB EQ
REC EQ
KIL
A_VCC
N.C.
A-GND
BAL TC1
TRICK HIGH OUT
PEAKING
MAIN EMPH
REG
CV024 1u 50V
CV023 10u 50V
CV020 100u 16V
CV021 100n Y5V
LV003 10u
JV146
CV083 10u 50V
CV102 1n X7R
CV084 10n Y5V
CV018 10u 50V
CV017 10n Y5V
CV015 100n X7R
CV016 1u 50V
JV025 JV150
CV014 100n Y5V
CV012 3n3 50V
RV014 0R
RV012 1K
JV152
CV011 200p NP0
JV151
TV005 BC858B
RV011 4K7
RV010 1K5
CV019 33p NP0
LV007 33u
CV065 120p N750
RV056 330R
CV008 330p NP0
CV013 39p NP0
CV037 22u 16V
JV034
RV136 2k2
RV140 1K
LV014 270u @ 680u
CV140 82p @ 33p N750
TV014 BC848B
RV141 1K
@RV114 180R
JV136
RV134 120R @1k5
CV132 10n X7R
JV123
RV135 430R
CV001 1u 50V
CV002 47n X7R
CV004 10n X7R
CV022 100n Y5V
RV001 470R
CV073 7p N750
LV070 18u
CV074 18p NP0
RV950 1k
RV070 0R
CV070 0R
TV001 BC848/B
LV001 68u
CV005 24p N750
CV006 10n Y5V
RV003 1k5
RV002 430R
CV066 (Prep) NP0
& RV020 2k2
RV946 0R
JV047 JV141 JV167
JV132
RV082 10K
CV003 22n Y5V
TV003 BC848B
RV006 2K2
RV008 18K
RV004 1K
TV004 BC848B
RV005 3K9
CV010 10n Y5V
RV009 10K
RV007 1K
CV009 22n Y5V
TV002 RN1402
RV013 0R
JV044
JV005
JV137 JV148 JV154
RV050 82R
RV420 0R
REC_ON
TRICK
HA_SEL
PB_Y/C
V_EE_REC1
PV
CSYNC
VIDEO_OUT
JV149
PB_Y/C
PB_ON
JV049
COL_OFF
CSYNC
KIL_DET
MAIN_D_EMP
OSD_VIDEO
VIDEO_OUT
BV0
PB_Y/C
PB_ON
CHR_REC
PME_REC
HA_SEL1
GND
V_EE_REC1
+5VS
P/ME CHR_P
PB_CHROMA
COL_OFF
CSYNC
KIL_DET
MAIN_D_EMP
JV009 JV027
JV066 JV074
JV124
JV125
JV120
JV126
JV119
JV118
JV003
JV160
JV146
JV050
JV155
JV048
JV043
JV008
JV056 JV042 JV037 JV031 JV026 JV016 JV014 JV004
JV129 JV116 JV110 JV106 JV075 JV073 JV061 JV060
JV402 JV162 JV145 JV138 JV130
JV133 JV128 JV058 JV030
JV156 JV157 JV153 JV139
①
②
③
④
⑤
⑥
⑦
⑧

S


TERMINAL BOARD
BX003
BX002
BX001
A_EE-PB-MD
AV3_ON
V_IF
V_EE_REC1
V_EE_PB_MD
VEE_PB
AV_PIN10
IIC_CLK_EV
IIC_DA_EV
JV063
JV062
JV007
+5.1VE
JV006
SIF
A_IF
BUS_CLK_SW
BUS_DA_SW
SCART1_ON
SCART2
A_EE_PB
A_MUTE
A_EE_REC1
REC_ON
+5.1VE
AFF
A_ENV
L_LEV_M
R_LEV_M
HIFI_DET
MPX_ERR
REC_LEV
+14VE2
-5VE
+5VS
+12VS
OSD
OSD_VIDEO
VIDEO_OUT
TV012
BC848B
RV041
1K
RV491
(Prep)
RV418
1k
JV401
LV410
10u
+5VS
RV415
2k2
TV405
BC858B
RV417
2k4
RV411
1M
CV404
330N
Y5V
IV401
MM1226XFBE
JV400
CV410
100u
16V
RV421
560
BIAS
CLAMP
CV416
330N
Y5V
RV414
1M
TV402
BC848B
RV410
1K
CV412
18p
N750
CV413
75p
N750
RV495
(Prep)
RV494
(Prep)
RV407
1k
VEE_PB
JV011
TV403
BC858B
RV403
0R
TV401
BC858B
LV401
39u
CV401
33P
N750
LV402
15u
LV403
8u2
RV408
1K
RV496
100R
RV401
10k
CV414
(Prep)
NP0
CV407
8p
NP0
CV409
12p
NP0
RV492
0R
CV405
1n5
X7R
TV404
RN1402
PH
OSD_MIX_L
BV003
RV493
(Prep)
PB_Y/C
PB_ON
CHR_REC
P/ME_REC
HA_SEL1
GND
V_EE_REC1
+5VS
P/ME_CHR_P
PB_CHROMA
COL_OFF
CSYNC
KIL_DET
MAIN_D_EMP
SECAM BOARD
(BC100)
BW001P3
JV107
RV036
0R
JV108
DFF
RV038
22K
RV037
4K7
CSYNC
JV013
CV050
56p
NP0
RV039
12K
JV028
+5VS
RV040
3R3
% BV001
&BV010
REC_ON
RV033
150K
GND
REC_YC
BV001P3
HA_CSYNC
DFFHASEL
HD_VID_ENV
COMPARATOR
PB_Y/C
NC
JV036
JV038
JV024
JV035
JV040
JV020
JV039
JV021
FROM HEAD AMP
JV012
RV940
0R
DV003
LL4448
RV035
47K
COMPARATOR
PB_YC1
PB_Y/C
RV090
100R
JV123
LV006
0R
+5VS
CV047
100n
Y5V
RV941
& 0R
RV060
% 120K
& 68K
TV010
RN1402
REC_ON
JV166
JV136
RV134
620R
@1k5
CV132
10n
X7R
TV008
BC848B
RV028
1K5
RV032
100K
TV009
RN2402
+5VS
CV038
22N
Y5V
CV039
100p
NP0
CV049
22n
X7R
RV027
1k5
DV002
LL4448
CV051
22n
Y5V
+5VS
RV031
560K
VIDEO_ENV
HA_SEL
RV943
0R
RV135
430R
CV133
@36p
NP0
JV131
CSYNC
KIL_DET
MAIN_D_EMP
TRICK
PB
REC
PB / REC
+5VS
CV508
1u
50V
+12.6VE_LM
LV500
470u
25V
CV505
10n
Y5V
RV503
3k9
QV500
CSB500F9
DX351
LL4148
RV502
560R
CV507
100u
10V
CV506
100n
Y5V
TX351
RN2402
IV500
LA7217M
AFC
32fH
VCO
COUNT
DOWN
LOCK
DET
SYNC
SEP
V.SEP
NC
JV022
CV504
820p
N750
TX350
RN1402
TX352
RN1402
RX353
1k
RX355
10k
+5.1VE
1N4148
DX352
RX358
6.2V
Zener
RX356
5k6
VIDEO_OUT
JV161
RV504
39k
CV501
1u
50V
CV503
22n
X7R
RV506
4k7
CV509
47p
NP0
RV501
150k
CV502
56n
X7R
+5VS
RV505
4k7
JV002
CSYNC1
RV061
4k7
HD
SCART_ACT
16:9
SCART1_ON
SCART1

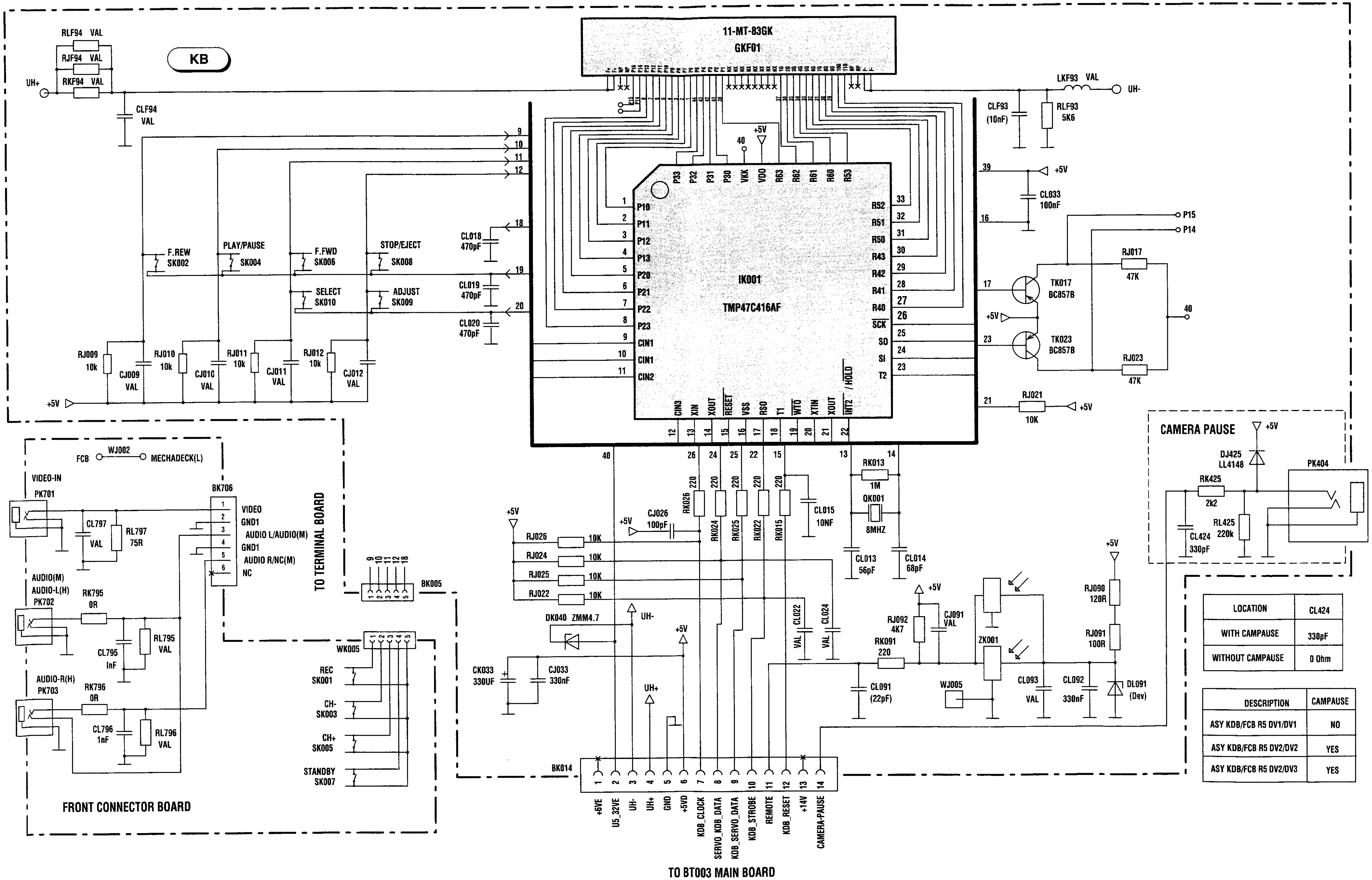
LOC	% TTN DRUM	& TB6 DRUM
RV098	180K	120K
RV948	x	x
RV941	x	✓
RV060	120K	68K
BV001	x	✓
BV010	x	✓

Note: * For Icon Models Only
@ For Models Without Secam Module.
# For Models With Secam Module.
& For Models Without S-VHS Playback.

S.

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6650E)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

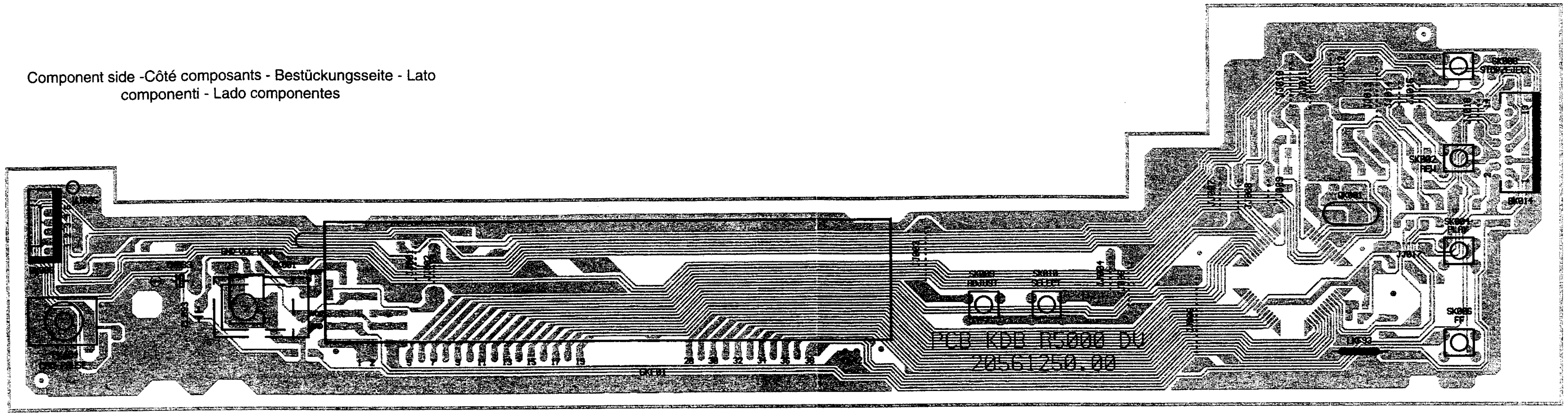

KB
11-MT-83GK
GKF01
IK001
TMP47C416AF
RLF94 VAL
RJF94 VAL
RKF94 VAL
UH+
CLF94 VAL
LKF93 VAL
UH-
CLF93 (10nF)
RLF93 5K6
CL033 100nF
P15
P14
TK017 BC857B
TK023 BC857B
RJ017 47K
RJ023 47K
RJ021 10K
F.REW SK002
PLAY/PAUSE SK004
F.FWD SK006
STOP/EJECT SK008
SELECT SK010
ADJUST SK009
CL018 470pF
CL019 470pF
CL020 470pF
RJ009 10k
RJ010 10k
RJ011 10k
RJ012 10k
CJ009 VAL
CJ010 VAL
CJ011 VAL
CJ012 VAL
+5V
P10
P11
P12
P13
P20
P21
P22
P23
CIN1
CIN1
CIN2
P33
P32
P31
P30
VKK
VDD
R63
R62
R61
R60
R53
R52
R51
R50
R43
R42
R41
R40
SCK
SO
SI
T2
CIN3
XIN
XOUT
RESET
VSS
RSO
T1
WTO
XTIN
XOUT
INT2
/HOLD
CAMERA PAUSE
DJ425 LL4148
PK404
RK425 2k2
RL425 220k
CL424 330pF
FCB
WJ002
MECHADECK(L)
VIDEO-IN PK701
BK706
VIDEO
GND1
AUDIO L/AUDIO(M)
GND1
AUDIO R/NC(M)
NC
CL797 VAL
RL797 75R
AUDIO(M) AUDIO-L(H) PK702
RK795 0R
CL795 InF
RL795 VAL
AUDIO-R(H) PK703
RK796 0R
CL796 1nF
RL796 VAL
TO TERMINAL BOARD
BK005
WK005
REC SK001
CH- SK003
CH+ SK005
STANDBY SK007
FRONT CONNECTOR BOARD
RJ026 10K
RJ024 10K
RJ025 10K
RJ022 10K
CJ026 100pF
RK026 220
RK024 220
RK025 220
RK022 220
RK015 220
CL015 10NF
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
DK040 ZMM4.7
CK033 330UF
CJ033 330nF
CL022 VAL
CL024 VAL
RJ092 4K7
CJ091 VAL
RK091 220
ZK001
CL091 (22pF)
WJ005
CL093 VAL
CL092 330nF
RJ090 120R
RJ091 100R
DL091 (Dev)
+14V
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
TO BT003 MAIN BOARD

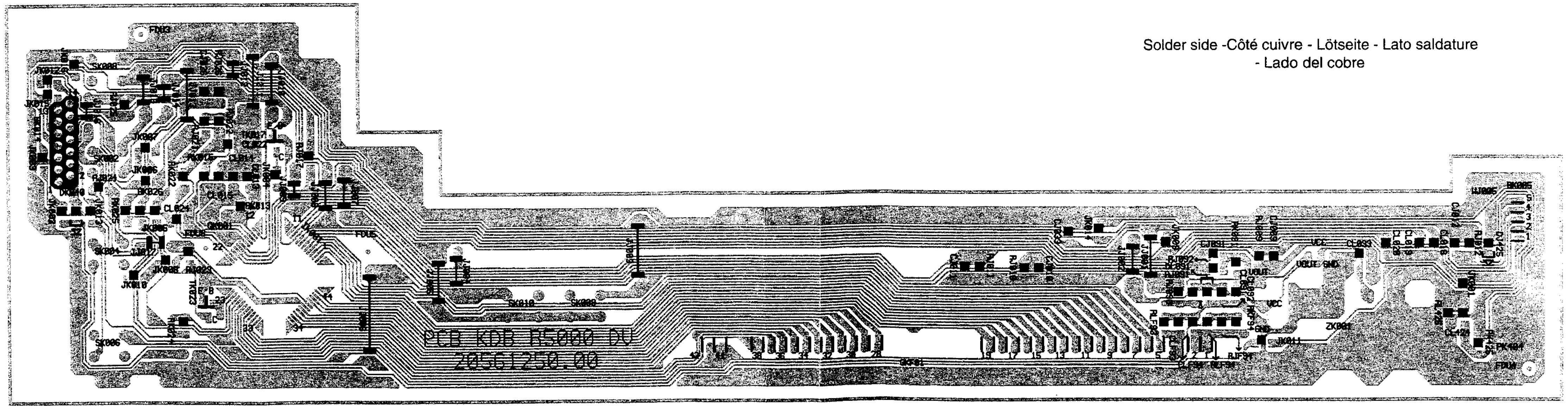
LOCATION	CL424
WITH CAMPAUSE	330pF
WITHOUT CAMPAUSE	0 Ohm

DESCRIPTION	CAMPAUSE
ASY KDB/FCB R5 DV1/DV1	NO
ASY KDB/FCB R5 DV2/DV2	YES
ASY KDB/FCB R5 DV2/DV3	YES

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


PCB KDB R5000 DU
20561250.00

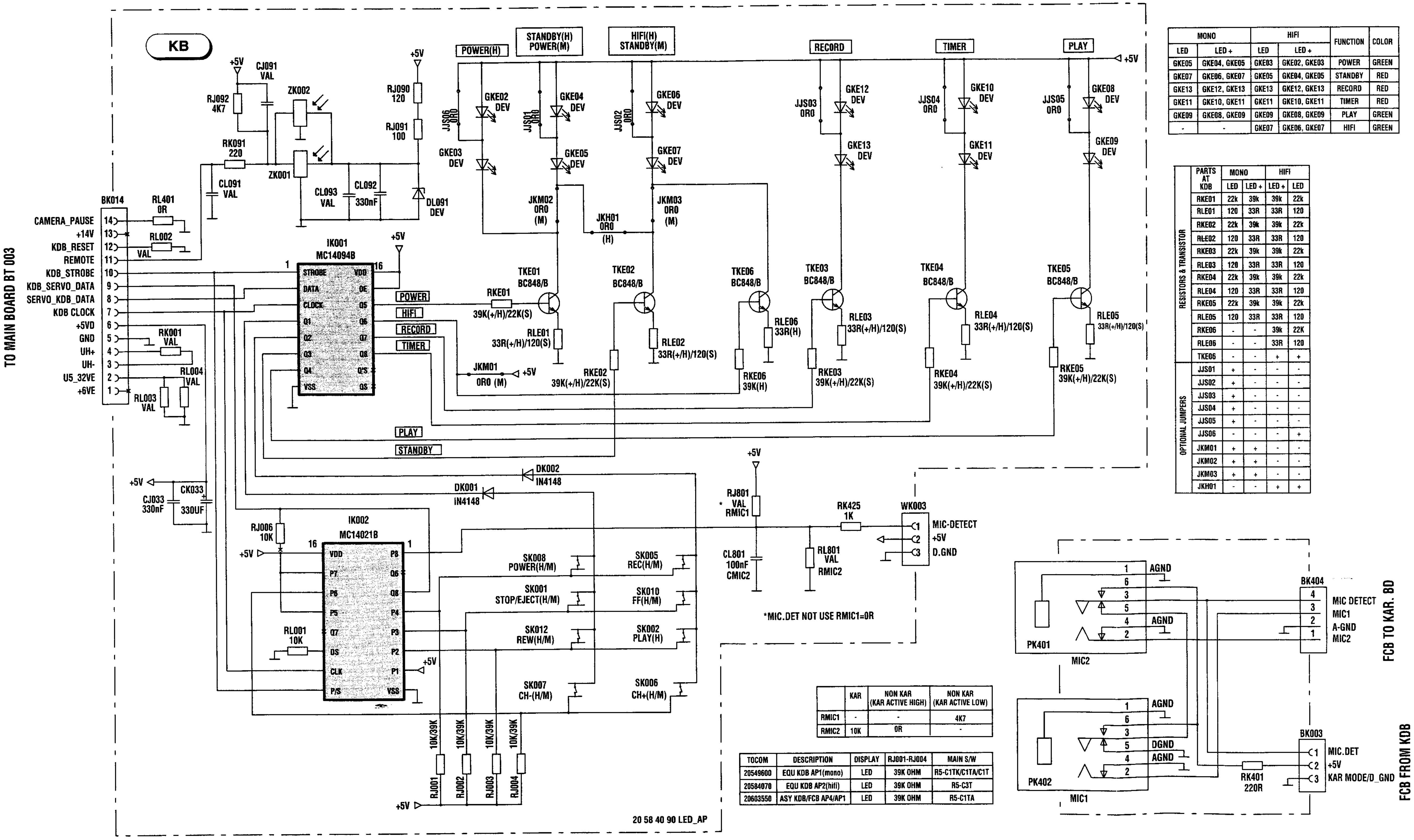

PCB KDB R5000 DU
20561250.00

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR *(VK840PS)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

S.


KB
TO MAIN BOARD BT 003
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
RL401 0R
RL002 VAL
RK001 VAL
RL004 VAL
RL003 VAL
RJ092 4K7
CJ091 VAL
ZK002
ZK001
RK091 220
CL091 VAL
CL093 VAL
CL092 330nF
RJ090 120
RJ091 100
DL091 DEV
IK001 MC14094B
STROBE
DATA
CLOCK
VDD
OE
VSS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
+5V
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE08 DEV
GKE09 DEV
GKE10 DEV
GKE11 DEV
GKE12 DEV
GKE13 DEV
JJS01 0R0
JJS02 0R0
JJS03 0R0
JJS04 0R0
JJS05 0R0
JJS06 0R0
JKM01 0R0 (M)
JKM02 0R0 (M)
JKM03 0R0 (M)
JKH01 0R0 (H)
TKE01 BC848/B
TKE02 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
TKE06 BC848/B
RKE01 39K(+/H)/22K(S)
RLE01 33R(+/H)/120(S)
RKE02 39K(+/H)/22K(S)
RLE02 33R(+/H)/120(S)
RKE03 39K(+/H)/22K(S)
RLE03 33R(+/H)/120(S)
RKE04 39K(+/H)/22K(S)
RLE04 33R(+/H)/120(S)
RKE05 39K(+/H)/22K(S)
RLE05 33R(+/H)/120(S)
RKE06 39K(H)
RLE06 33R(H)
DK002 1N4148
DK001 1N4148
CJ033 330nF
CK033 330UF
RJ006 10K
IK002 MC14021B
VDD
P7
P6
P5
Q7
DS
CLK
P/S
P8
Q6
Q8
P4
P3
P2
P1
VSS
RL001 10K
SK008 POWER(H/M)
SK001 STOP/EJECT(H/M)
SK012 REW(H/M)
SK007 CH-(H/M)
SK005 REC(H/M)
SK010 FF(H/M)
SK002 PLAY(H)
SK006 CH+(H/M)
RJ001 10K/39K
RJ002 10K/39K
RJ003 10K/39K
RJ004 10K/39K
RJ801 VAL RMIC1
CL801 100nF CMIC2
RK425 1K
RL801 VAL RMIC2
WK003
MIC-DETECT
+5V
D.GND
*MIC.DET NOT USE RMIC1=0R
PK401
MIC2
PK402
MIC1
AGND
DGND
BK404
MIC DETECT
MIC1
A-GND
MIC2
FCB TO KAR. BD
BK003
MIC.DET
+5V
KAR MODE/D_GND
RK401 220R
FCB FROM KDB
20 58 40 90 LED_AP

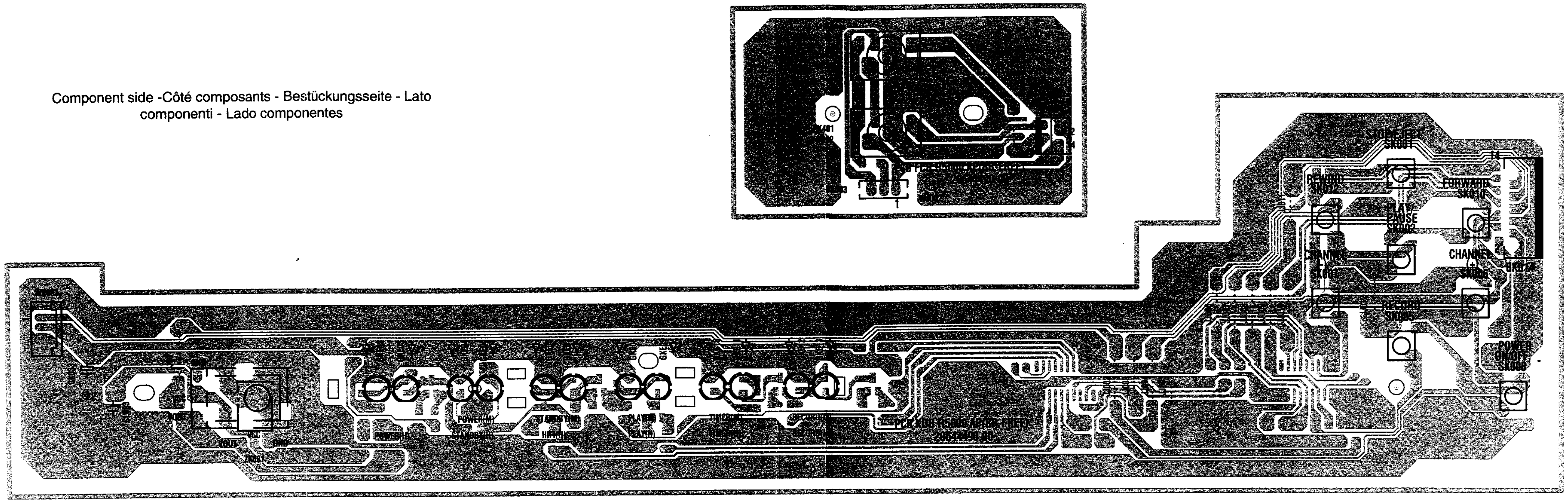
MONO		HIFI		FUNCTION	COLOR
LED	LED +	LED	LED +		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	GKE09	GKE08, GKE09	PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

	PARTS AT KDB	MONO		HIFI	
		LED	LED +	LED +	LED
RESISTORS & TRANSISTOR	RKE01	22k	39k	39k	22k
	RLE01	120	33R	33R	120
	RKE02	22k	39k	39k	22k
	RLE02	120	33R	33R	120
	RKE03	22k	39k	39k	22k
	RLE03	120	33R	33R	120
	RKE04	22k	39k	39k	22k
	RLE04	120	33R	33R	120
	RKE05	22k	39k	39k	22k
	RLE05	120	33R	33R	120
	RKE06	-	-	39k	22K
	RLE06	-	-	33R	120
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	-	-
	JJS02	+	-	-	-
	JJS03	+	-	-	-
	JJS04	+	-	-	-
	JJS05	+	-	-	-
	JJS06	-	-	-	+
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

	KAR	NON KAR (KAR ACTIVE HIGH)	NON KAR (KAR ACTIVE LOW)
RMIC1	-	-	4K7
RMIC2	10K	0R	-

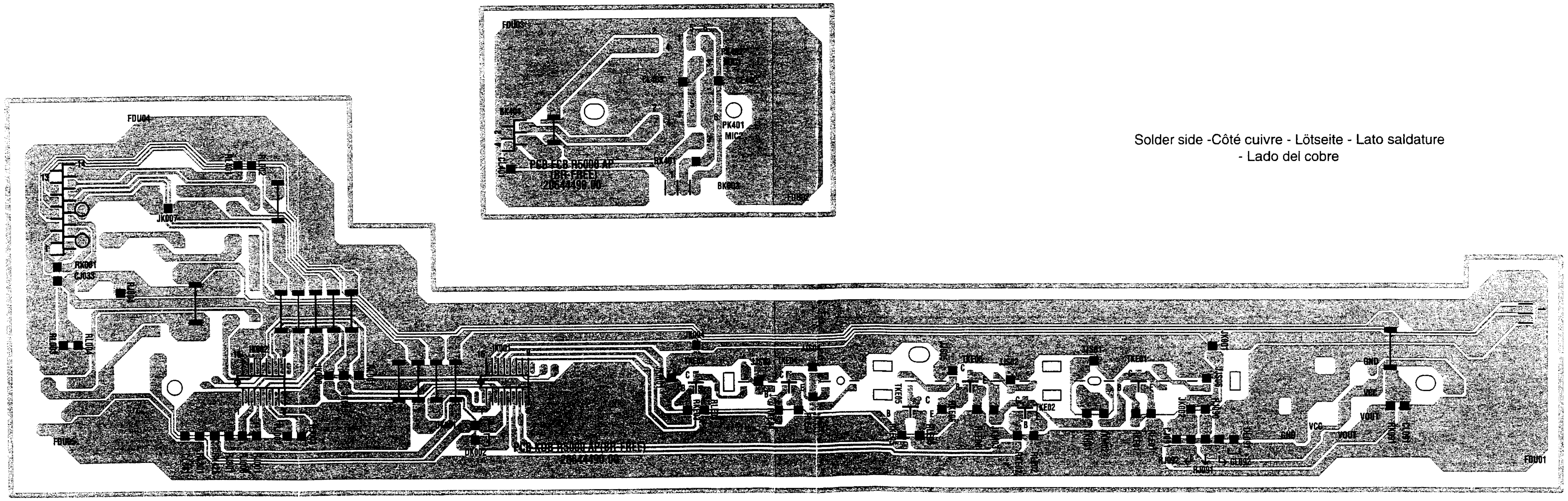
TOCOM	DESCRIPTION	DISPLAY	RJ001-RJ004	MAIN S/W
20549600	EQU KDB AP1(mono)	LED	39K OHM	R5-C1TK/C1TA/C1T
20584070	EQU KDB AP2(hifi)	LED	39K OHM	R5-C3T
20603550	ASY KDB/FCB AP4/AP1	LED	39K OHM	R5-C1TA

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR



Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

PK401
SK000/EJECT
SK001
REWIND
SK012
FORWARD
SK010
PLAY/
PAUSE
SK002
CHANNEL
-
SK003
CHANNEL
+
SK006
BK014
RECORD
SK005
POWER
ON/OFF
SK008
14
2
1
POWER
STANDBY
20644490.00



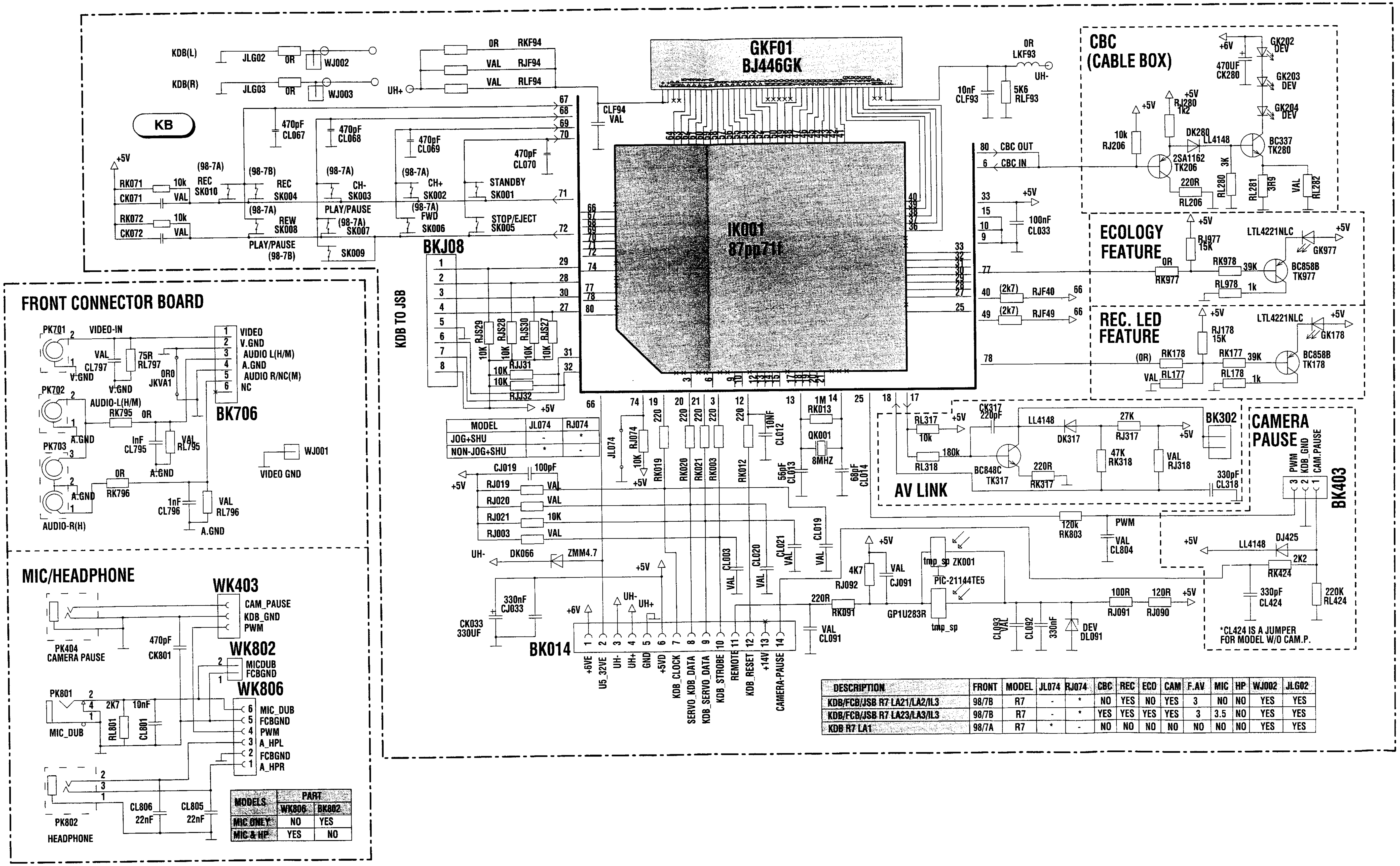
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

FDU04
FDU02
FDU01
PK401
MIC
JK007
RK001
CJ035
PCB FCB R5000 AP
20644490.00
GND
VCC
VOUT

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6800G - FV307HV)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

S.


KB
KDB(L)
KDB(R)
JLG02
JLG03
WJ002
WJ003
UH+
UH-
RKF94
RJF94
RLF94
OR
VAL
470pF
CL067
CL068
CL069
CL070
RK071
CK071
RK072
CK072
REC
SK010
SK004
REW
SK008
CH-
SK003
CH+
SK002
PLAY/PAUSE
SK007
FWD
SK006
SK009
STANDBY
SK001
STOP/EJECT
SK005
(98-7A)
(98-7B)
GKF01
BJ446GK
CLF94
LKF93
CLF93
RLF93
IK001
87pp71f
BKJ08
KDB TO JSB
RJS29
RJS28
RJS30
RJS27
RJJ31
RJJ32
CBC
(CABLE BOX)
GK202
GK203
GK204
DEV
CK280
RJ280
DK280
LL4148
2SA1162
TK206
BC337
TK280
RJ206
RL206
RL280
RL281
RL282
CBC OUT
CBC IN
CL033
ECOLOGY FEATURE
RJ977
RK977
RK978
RL978
LTL4221NLC
GK977
BC858B
TK977
RJF40
RJF49
REC. LED FEATURE
RJ178
RK178
RK177
RL177
RL178
GK178
TK178
FRONT CONNECTOR BOARD
PK701
VIDEO-IN
CL797
RL797
JKVA1
PK702
AUDIO-L(H/M)
RK795
CL795
RL795
PK703
RK796
CL796
RL796
AUDIO-R(H)
A.GND
V.GND
BK706
VIDEO
V.GND
AUDIO L(H/M)
A.GND
AUDIO R/NC(M)
NC
WJ001
VIDEO GND
MIC/HEADPHONE
WK403
CAM_PAUSE
KDB_GND
PWM
PK404
CAMERA PAUSE
CK801
WK802
MICDUB
FCBGND
PK801
MIC_DUB
RL801
CL801
WK806
MIC_DUB
FCBGND
PWM
A_HPL
FCBGND
A_HPR
PK802
HEADPHONE
CL806
CL805
22nF
JL074
RJ074
RK019
RK020
RK021
RK003
RK012
CL012
RK013
QK001
8MHZ
CL013
CL014
CJ019
RJ019
RJ020
RJ021
RJ003
DK066
ZMM4.7
CK033
CJ033
BK014
+6V
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
CL003
CL020
CL021
CL019
RJ092
CJ091
ZK001
PIC-21144TE5
GP1U283R
RK091
CL091
CL093
CL092
DL091
RJ091
RJ090
AV LINK
RL317
RL318
CK317
DK317
RJ317
RK318
RJ318
BC848C
TK317
RK317
CL318
BK302
CAMERA PAUSE
BK403
PWM
KDB_GND
CAM.PAUSE
RK803
CL804
DJ425
RK424
CL424
RL424
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.

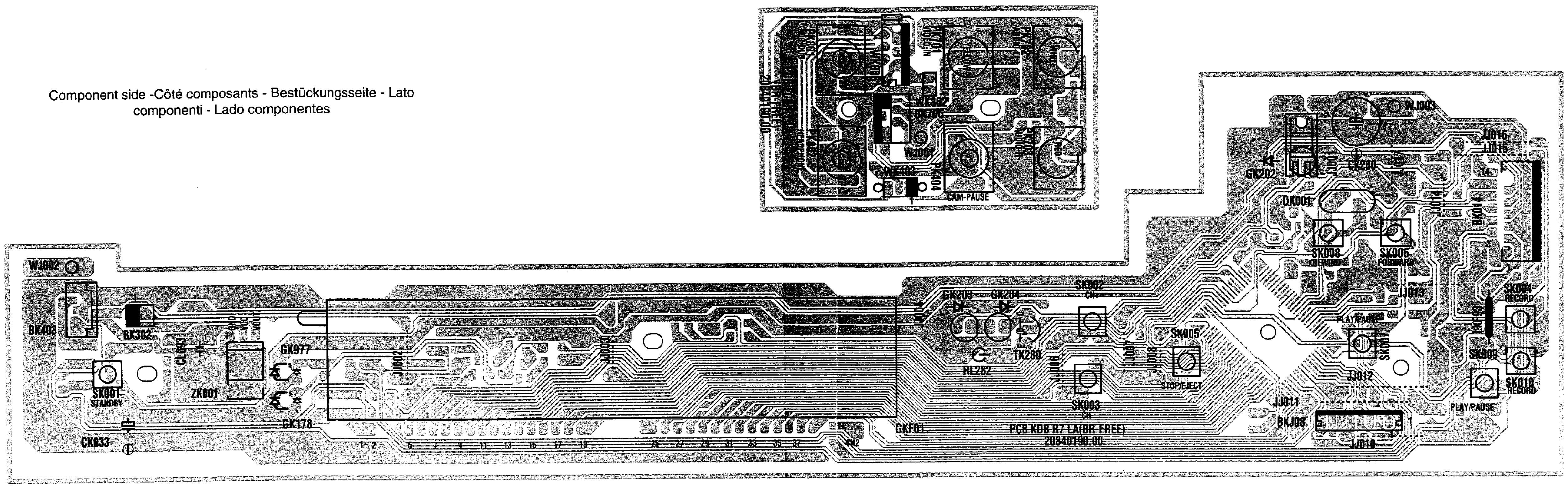
MODEL	JL074	RJ074
JOG+SHU	-	*
NON-JOG+SHU	*	-

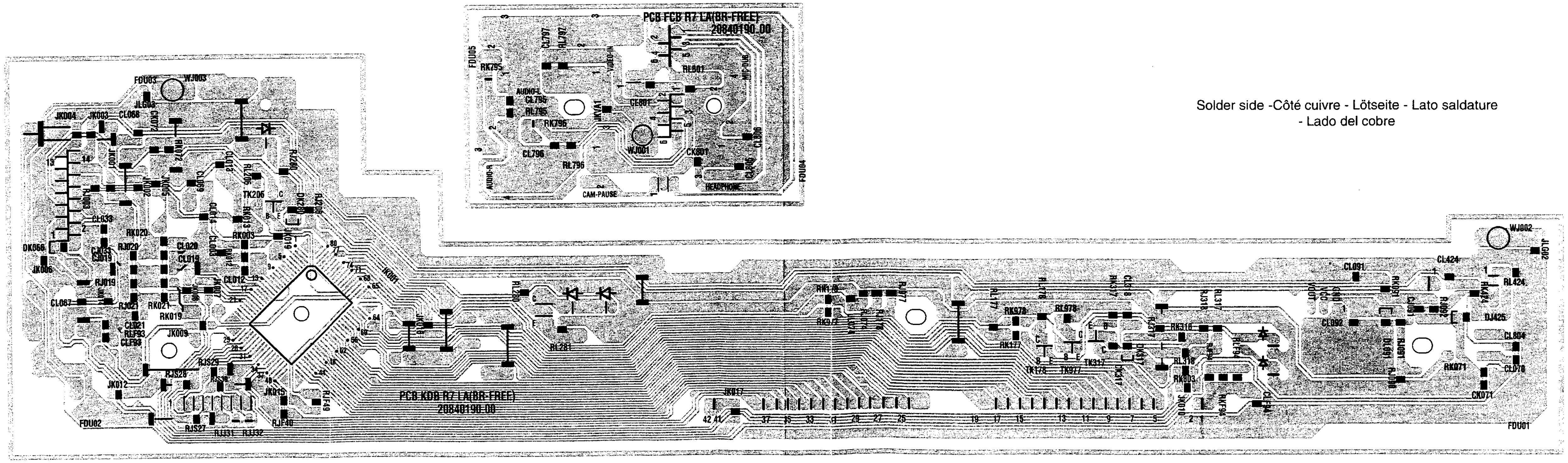
MODELS	PART	
	WK806	BK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

DESCRIPTION	FRONT	MODEL	JL074	RJ074	CBC	REC	ECO	CAM	F.AV	MIC	HP	WJ002	JLG02
KDB/FCB/JSB R7 LA21/LA2/IL3	98/7B	R7	-	*	NO	YES	NO	YES	3	NO	NO	YES	YES
KDB/FCB/JSB R7 LA23/LA3/IL3	98/7B	R7	-	*	YES	YES	YES	YES	3	3.5	NO	YES	YES
KDB R7 LA1	98/7A	R7	*	-	NO	NO	NO	NO	NO	NO	NO	YES	YES

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


WJ002
BK403
BK302
SK001
STANDBY
ZK001
GK977
GK178
CK033
GKF01
PCB KDB R7 LA(BR-FREE)
20840190.00
GK203
GK204
TK280
RL282
SK002
CH+
SK003
CH-
SK005
STOP/EJECT
SK008
REWIND
SK006
FORWARD
SK004
RECORD
SK009
SK010
RECORD
PLAY/PAUSE
JJ011
JJ012
JJ013
BKJ08
LJ010
BK014
QK001
CK280
GK202
WJ003
LJ016
LJ015
WJ001
CAM-PAUSE


PCB FCB R7 LA(BR-FREE)
20840190.00
FDU05
FDU04
AUDIO-L
AUDIO-R
VIDEO-IN
WJ001
CK801
HEADPHONE
CAM-PAUSE
FDU03
WJ003
JK004
JK003
JL003
DK066
JK006
CL067
TK206
JK009
JK012
FDU02
PCB KDB R7 LA(BR-FREE)
20840190.00
RJ027
RJ031
RJ032
RL281
WJ002
JL002
CL424
RL424
DJ425
CL804
CL070
RK071
CK071
FDU01

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6980 - VPH6990)*

S.

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

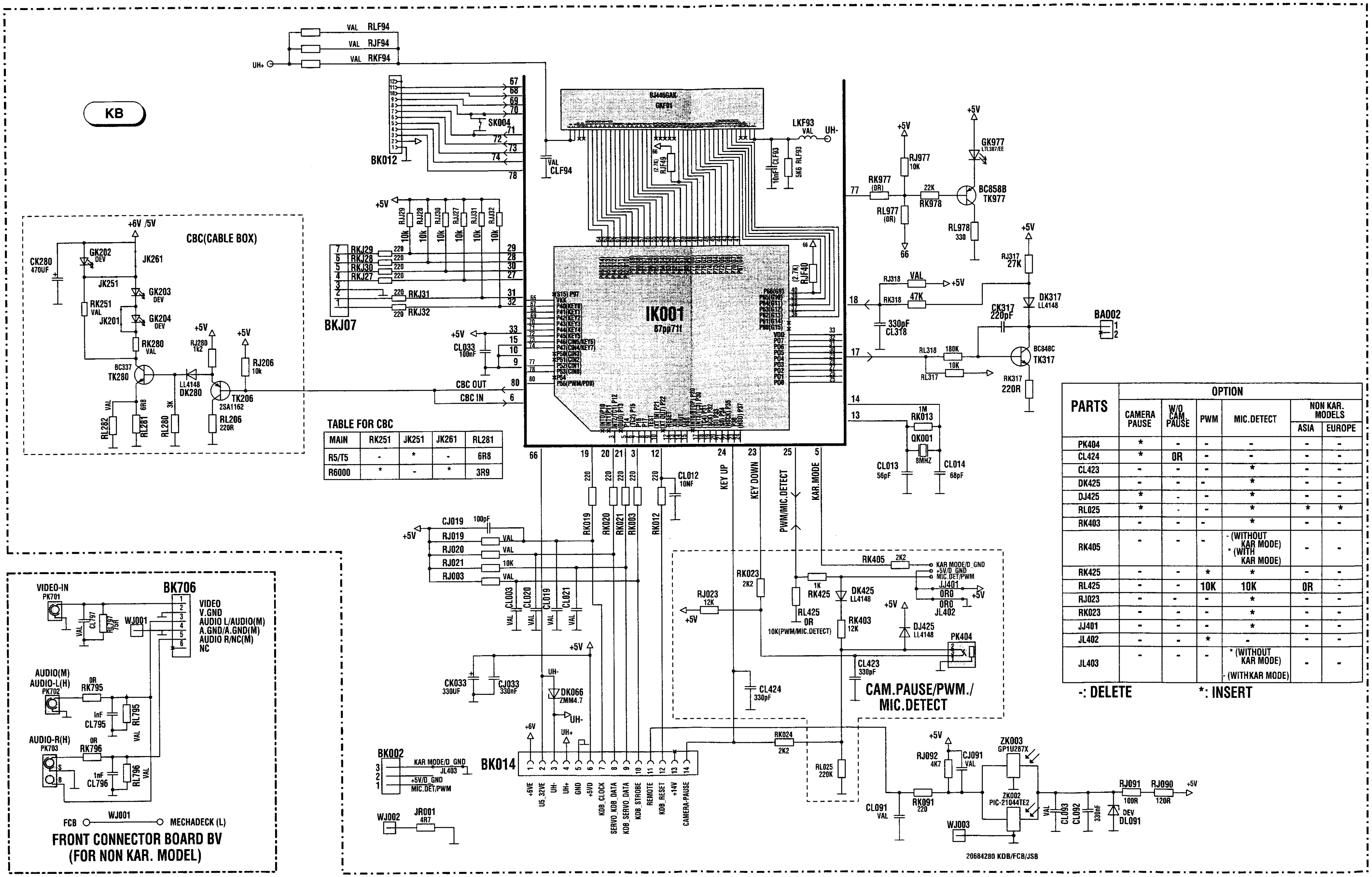

KB
UH+
VAL RLF94
VAL RJF94
VAL RKF94
BK012
SK004
VAL CLF94
BJ446GAK
GKF01
LKF93 VAL UH-
10nF CLF93
5K6 RLF93
(2.7K) RJF49
IK001
87pp71f
(2.7K) RJF40
+5V
RJ977 10K
GK977 LTL307/EE
RK977 (0R)
22K RK978
BC858B TK977
RL977 (0R)
RL978 330
RJ317 27K
RJ318 VAL
RK318 47K
CK317 220pF
DK317 LL4148
330pF CL318
BA002
RL318 180K
10K
RL317
BC848C TK317
RK317 220R
RJ29 RJ28 RJ30 RJ27 RJ31 RJ32
10k
RKJ29 RKJ28 RKJ30 RKJ27 220
220 RKJ31
220 RKJ32
BKJ07
CL033 100nF
CBC OUT
CBC IN
CBC(CABLE BOX)
+6V /5V
CK280 470UF
GK202 DEV
JK261
JK251
GK203 DEV
RK251 VAL
JK201
GK204 DEV
RK280 VAL
RJ280 1K2
RJ206 10k
BC337 TK280
LL4148 DK280
TK206 2SA1162
RL282 VAL
RL281 6R8
RL280 3K
RL206 220R
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
RK019 RK020 RK021 RK003 RK012 220
CL012 10NF
KEY UP
KEY DOWN
PWM/MIC.DETECT
KAR.MODE
CJ019 100pF
RJ019 VAL
RJ020 VAL
RJ021 10K
RJ003 VAL
CL003 CL020 CL019 CL021 VAL
+5V
CK033 330UF
CJ033 330nF
DK066 ZMM4.7
UH-
UH+
+6V
RK405 2K2
KAR MODE/D_GND
+5V/D_GND
MIC.DET/PWM
JJ401 0R0
JL402 0R0
RK023 2K2
RJ023 12K
1K RK425
DK425 LL4148
RL425 0R
10K(PWM/MIC.DETECT)
RK403 12K
DJ425 LL4148
PK404
CL423 330pF
CL424 330pF
CAM.PAUSE/PWM./ MIC.DETECT
BK002
KAR MODE/D_GND
JL403
+5V/D_GND
MIC.DET/PWM
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
WJ002
JR001 4R7
RK024 2K2
RL025 220K
RJ092 4K7
CJ091 VAL
ZK003 GP1U287X
ZK002 PIC-21044TE2
CL091 VAL
RK091 220
WJ003
CL093 VAL
CL092 330nF
RJ091 100R
RJ090 120R
DEV DL091
20684280 KDB/FCB/JSB
VIDEO-IN PK701
BK706
CL797 VAL
RL797 75R
WJ001
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
AUDIO(M) AUDIO-L(H) PK702
0R RK795
InF CL795
RL795 VAL
AUDIO-R(H) PK703
0R RK796
1nF CL796
RL796 VAL
FCB
WJ001
MECHADECK (L)
FRONT CONNECTOR BOARD BV (FOR NON KAR. MODEL)

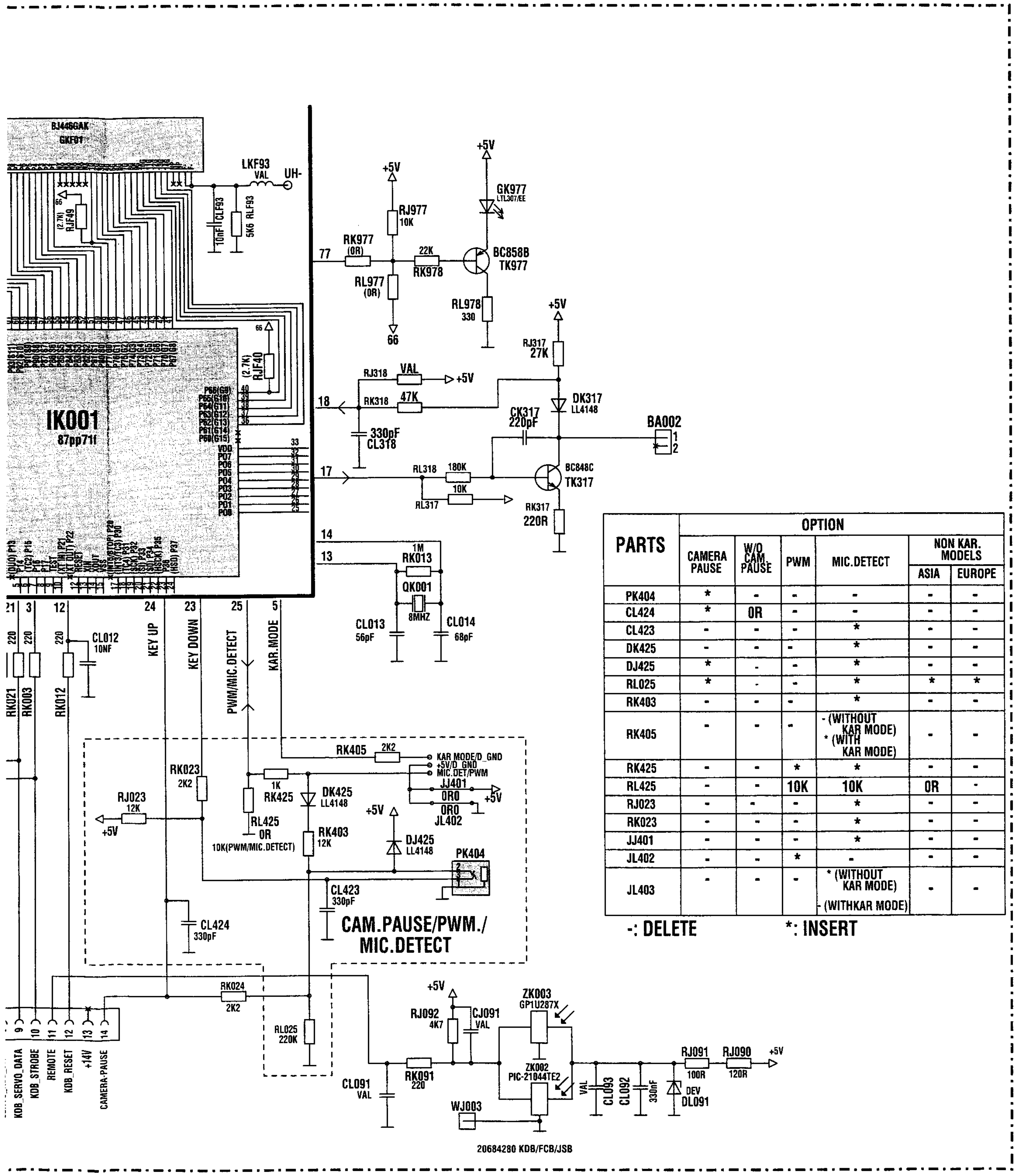
TABLE FOR CBC

MAIN	RK251	JK251	JK261	RL281
R5/T5	-	*	-	6R8
R6000	*	-	*	3R9

PARTS	OPTION					
	CAMERA PAUSE	W/O CAM. PAUSE	PWM	MIC.DETECT	NON KAR. MODELS	
					ASIA	EUROPE
PK404	*	-	-	-	-	-
CL424	*	0R	-	-	-	-
CL423	-	-	-	*	-	-
DK425	-	-	-	*	-	-
DJ425	*	-	-	*	-	-
RL025	*	-	-	*	*	*
RK403	-	-	-	*	-	-
RK405	-	-	-	- (WITHOUT KAR MODE) * (WITH KAR MODE)	-	-
RK425	-	-	*	*	-	-
RL425	-	-	10K	10K	0R	-
RJ023	-	-	-	*	-	-
RK023	-	-	-	*	-	-
JJ401	-	-	-	*	-	-
JL402	-	-	*	-	-	-
JL403	-	-	-	* (WITHOUT KAR MODE) - (WITHKAR MODE)	-	-

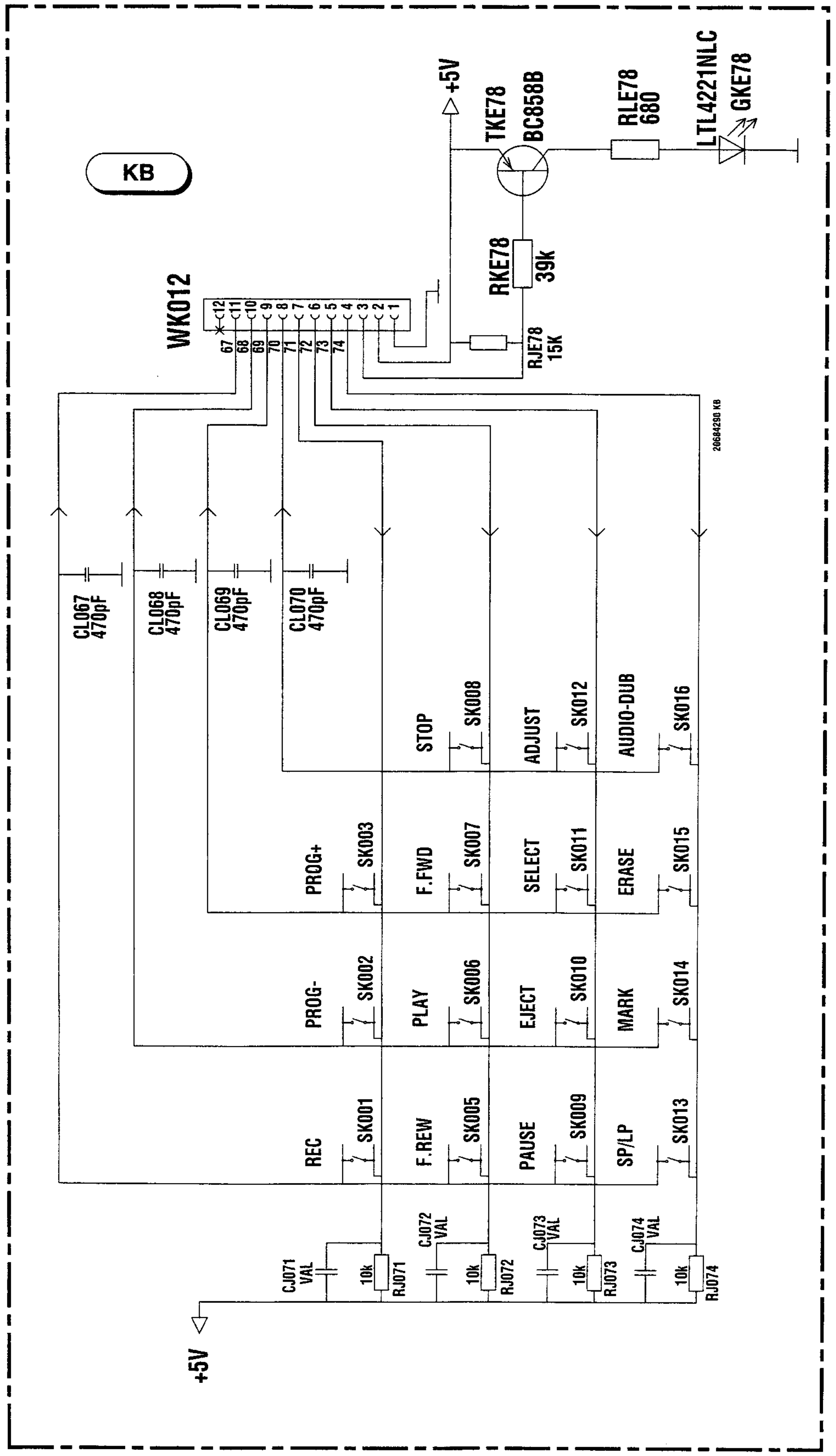
-: DELETE *: INSERT

S..


BJ44SGAK
GKF01
IK001
87pp71f
LKF93
VAL
UH-
CLF93
10nF
RLF93
5K6
RJF49
(2.7K)
RJF40
(2.7K)
+5V
RJ977
10K
RK977
(0R)
22K
RK978
RL977
(0R)
BC858B
TK977
GK977
LTL307/EE
RL978
330
77
66
RJ317
27K
RJ318
VAL
RK318
47K
CK317
220pF
DK317
LL4148
BA002
CL318
330pF
RL318
180K
10K
RL317
BC848C
TK317
RK317
220R
18
17
14
13
1M
RK013
QK001
8MHZ
CL013
56pF
CL014
68pF
CL012
10NF
RK021
RK003
RK012
KEY UP
KEY DOWN
PWM/MIC.DETECT
KAR.MODE
RK405
2K2
KAR MODE/D_GND
+5V/D_GND
MIC.DET/PWM
JJ401
0R0
JL402
RK023
2K2
RJ023
12K
RK425
1K
RL425
0R
10K(PWM/MIC.DETECT)
DK425
LL4148
RK403
12K
DJ425
LL4148
PK404
CL423
330pF
CL424
330pF
CAM.PAUSE/PWM./
MIC.DETECT
RK024
2K2
RL025
220K
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RJ092
4K7
CJ091
VAL
ZK003
GP1U287X
ZK002
PIC-21044TE2
CL091
VAL
RK091
220
WJ003
CL093
CL092
330nF
RJ091
100R
RJ090
120R
DEV
DL091
20684280 KDB/FCB/JSB

PARTS	OPTION					
	CAMERA PAUSE	W/O CAM. PAUSE	PWM	MIC.DETECT	NON KAR. MODELS	
					ASIA	EUROPE
PK404	*	-	-	-	-	-
CL424	*	0R	-	-	-	-
CL423	-	-	-	*	-	-
DK425	-	-	-	*	-	-
DJ425	*	-	-	*	-	-
RL025	*	-	-	*	*	*
RK403	-	-	-	*	-	-
RK405	-	-	-	- (WITHOUT KAR MODE) * (WITH KAR MODE)	-	-
RK425	-	-	*	*	-	-
RL425	-	-	10K	10K	0R	-
RJ023	-	-	-	*	-	-
RK023	-	-	-	*	-	-
JJ401	-	-	-	*	-	-
JL402	-	-	*	-	-	-
JL403	-	-	-	* (WITHOUT KAR MODE) - (WITHKAR MODE)	-	-

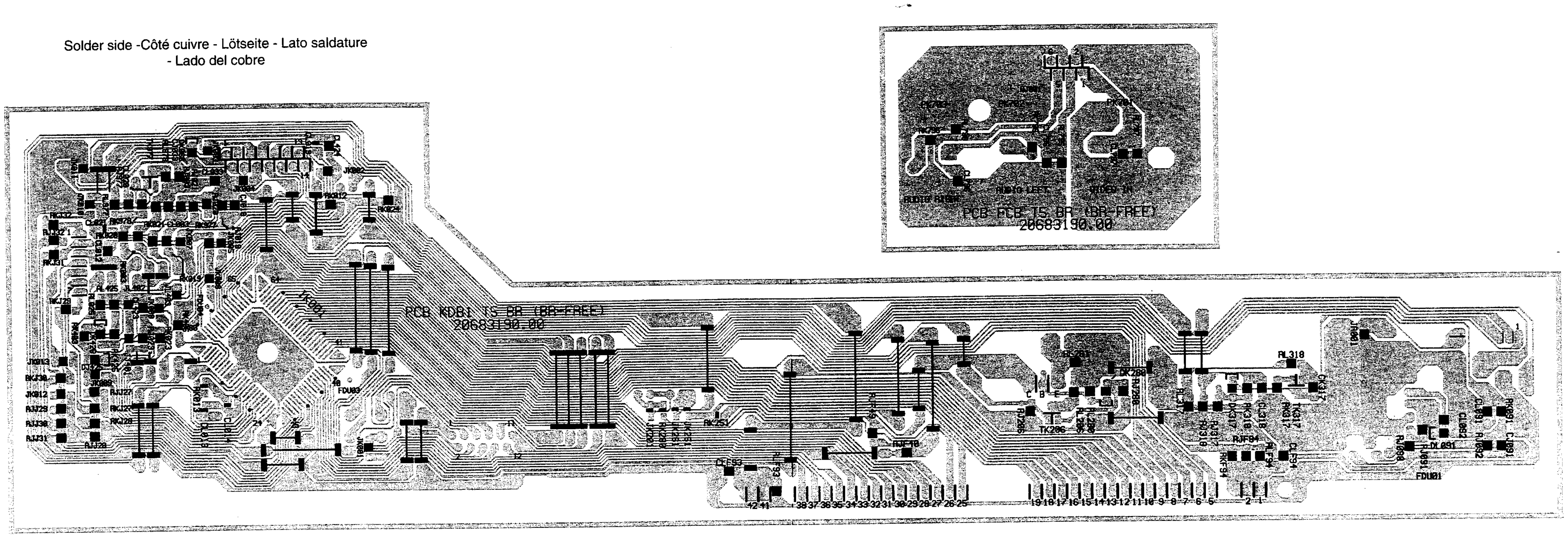
-: DELETE *: INSERT


KB
+5V
TKE78
BC858B
RLE78
680
LTL4221NLC
GKE78
RKE78
39k
RJE78
15K
WK012
CL067
470pF
CL068
470pF
CL069
470pF
CL070
470pF
STOP
SK008
ADJUST
SK012
AUDIO-DUB
SK016
PROG+
SK003
F.FWD
SK007
SELECT
SK011
ERASE
SK015
PROG-
SK002
PLAY
SK006
EJECT
SK010
MARK
SK014
REC
SK001
F.REW
SK005
PAUSE
SK009
SP/LP
SK013
CJ071
VAL
10k
RJ071
CJ072
VAL
10k
RJ072
CJ073
VAL
10k
RJ073
CJ074
VAL
10k
RJ074
+5V
20684280 KB

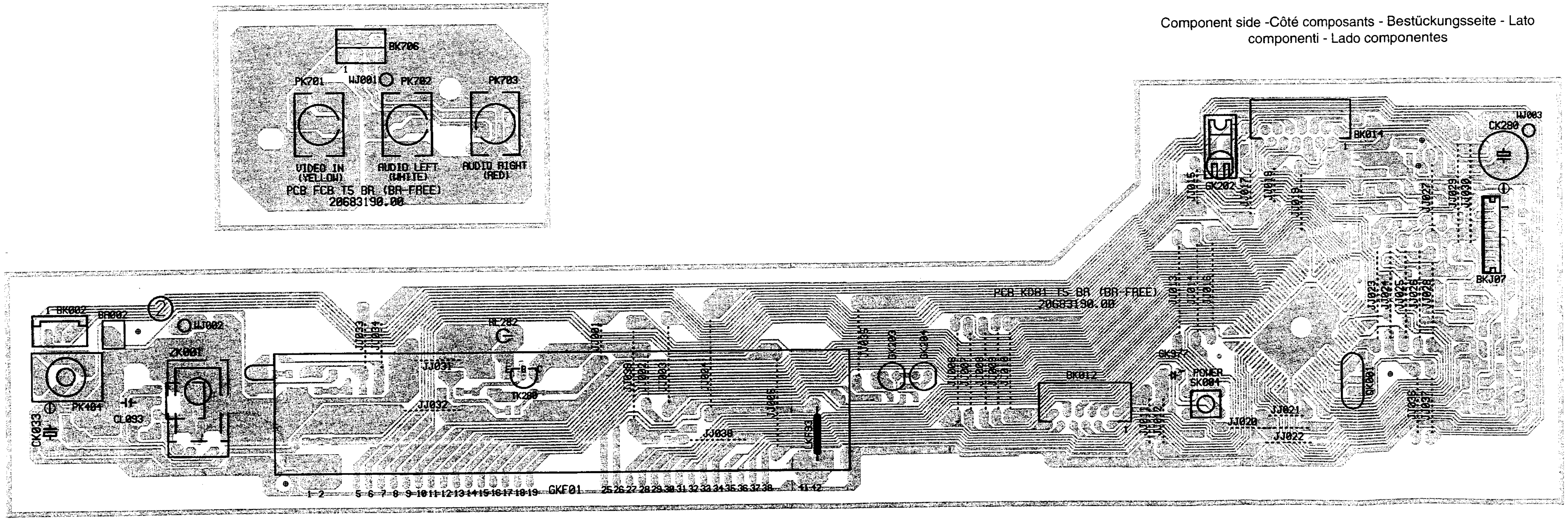
S.

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

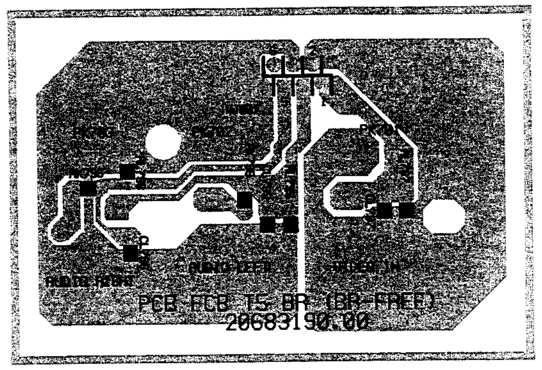
Solder side -Côté cuivre - Lötseite - Lato saldature
- Lado del cobre

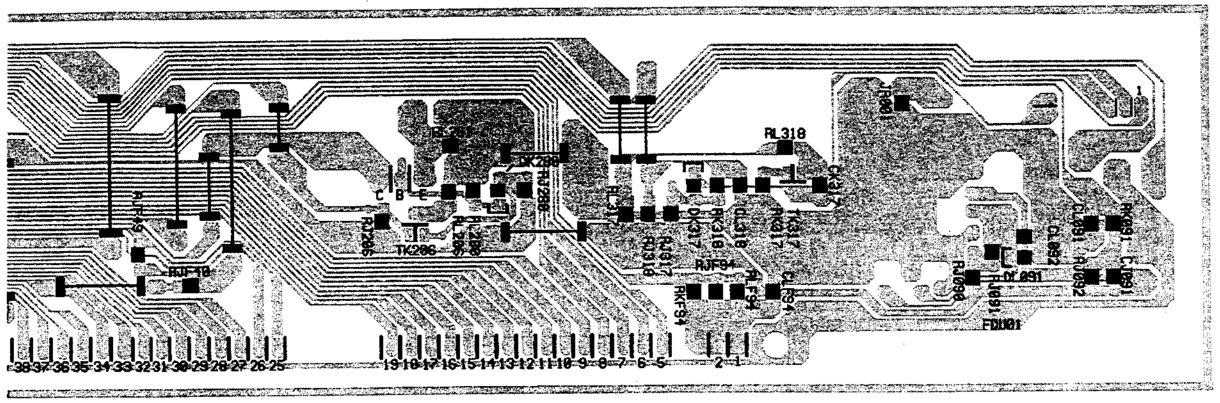

PCB KDB1 TS BR (BR-FREE)
20683190.00
PCB FCB TS BR (BR-FREE)
20683190.00
AUDIO RIGHT
AUDIO LEFT
VIDEO IN
RL318
FDU01
FDU03
CK280
TK286
BK251
CL093
DL091
RJF94
CLF94

Component side -Côté composants - Bestückungsseite - Lato
componenti - Lado componentes

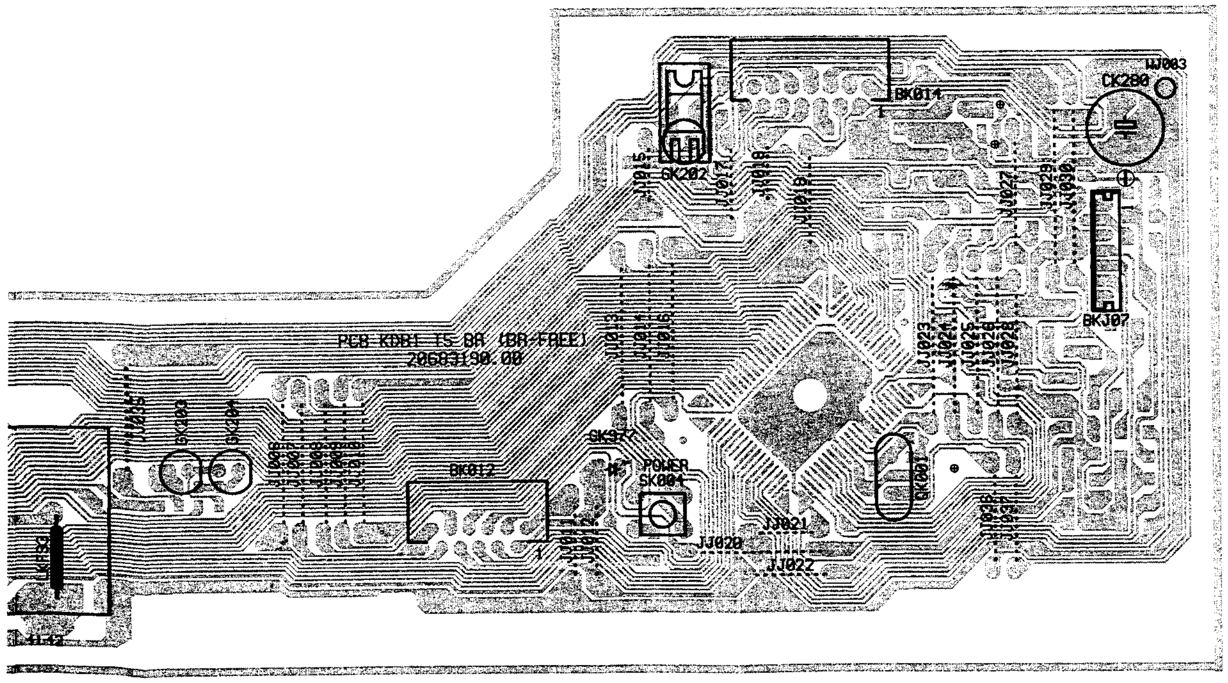

BK706
PK701
WJ001
PK702
PK703
VIDEO IN
(YELLOW)
AUDIO LEFT
(WHITE)
AUDIO RIGHT
(RED)
PCB FCB TS BR (BR-FREE)
20683190.00
PCB KDB1 TS BR (BR-FREE)
20683190.00
BK002
BR002
WJ002
ZK001
PK404
CL093
CK033
RL202
JJ031
JJ032
TK280
JJ038
BK012
SK377
POWER
SK001
JJ020
JJ021
JJ022
BK014
GK202
CK280
WJ003
BKJ07
GKF01

S

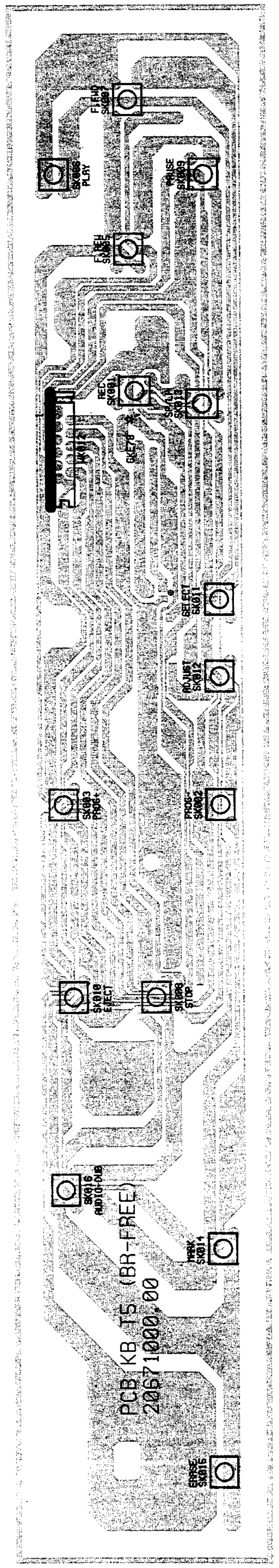

PCB FCB T5 BR (BR-FREE)
20683190.00


RL318
TK206
FD001
39 37 36 35 34 33 32 31 30 29 28 27 26 25
13 10 17 16 15 14 13 12 11 10 9 8 7 6 5
2 1

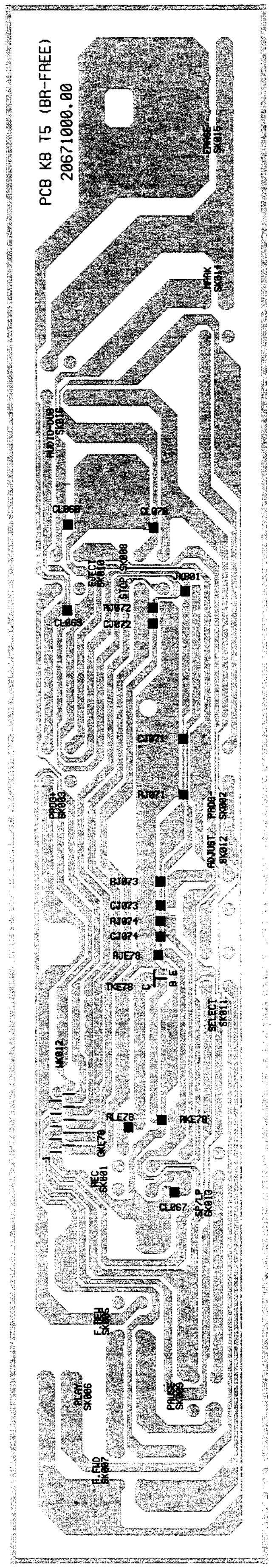
Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


WJ083
CK280
BK014
SK202
BKJ07
PCB KDB1 T5 BR (BR-FREE)
20683190.00
BK012
SK977
POWER
SK004
JJ020
JJ021
JJ022

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes


PLAY
PAUSE
SELECT
ADJUST
EJECT
STOP
AUDIO-DUB
PCB KB T5 (BR-FREE)
20671000.00

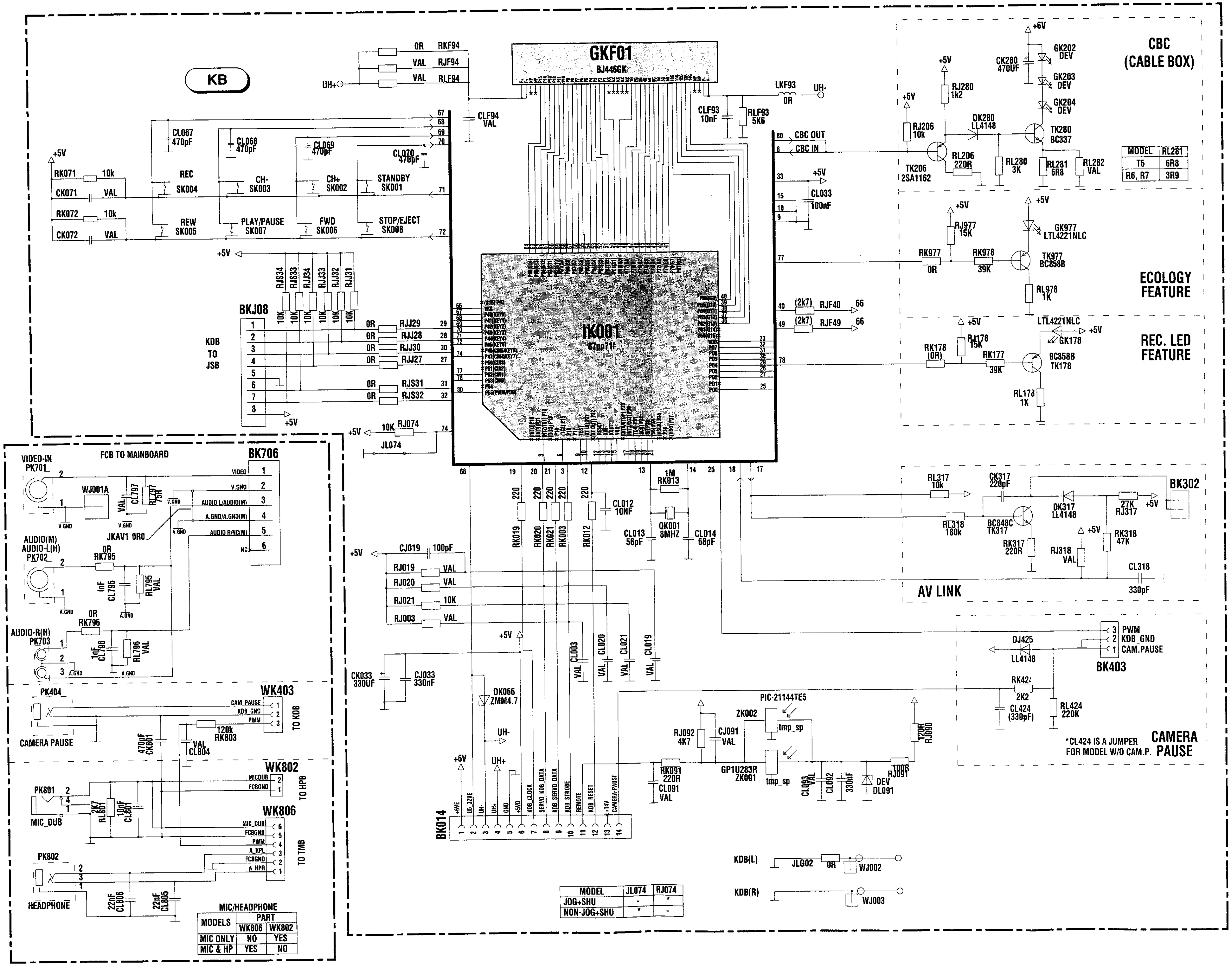
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB KB T5 (BR-FREE)
20671000.00
SELECT
ADJUST
PLAY
PAUSE

S.

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6920G - VPH6950F - VPH6950U)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
GKF01
BJ445GK
IK001
87pp71f
CBC
(CABLE BOX)
ECOLOGY
FEATURE
REC. LED
FEATURE
AV LINK
CAMERA
PAUSE
BKJ08
KDB
TO
JSB
FCB TO MAINBOARD
BK706
VIDEO-IN
PK701
AUDIO(M)
AUDIO-L(H)
PK702
AUDIO-R(H)
PK703
PK404
CAMERA PAUSE
WK403
TO KDB
PK801
MIC_DUB
WK802
TO HPB
WK806
TO TMB
PK802
HEADPHONE
BK014
BK302
BK403
PWM
KDB_GND
CAM.PAUSE
REC
SK004
CH-
SK003
CH+
SK002
STANDBY
SK001
REW
SK005
PLAY/PAUSE
SK007
FWD
SK006
STOP/EJECT
SK008
CBC OUT
CBC IN
TK206
2SA1162
TK280
BC337
GK977
LTL4221NLC
TK977
BC858B
GK178
TK178
TK317
BC848C
QK001
8MHZ
DK066
ZMM4.7
PIC-21144TE5
ZK002
GP1U283R
ZK001
tmp_sp
DL091
KDB(L)
JLG02
WJ002
KDB(R)
WJ003
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.

MODEL	RL281
T5	6R8
R6, R7	3R9

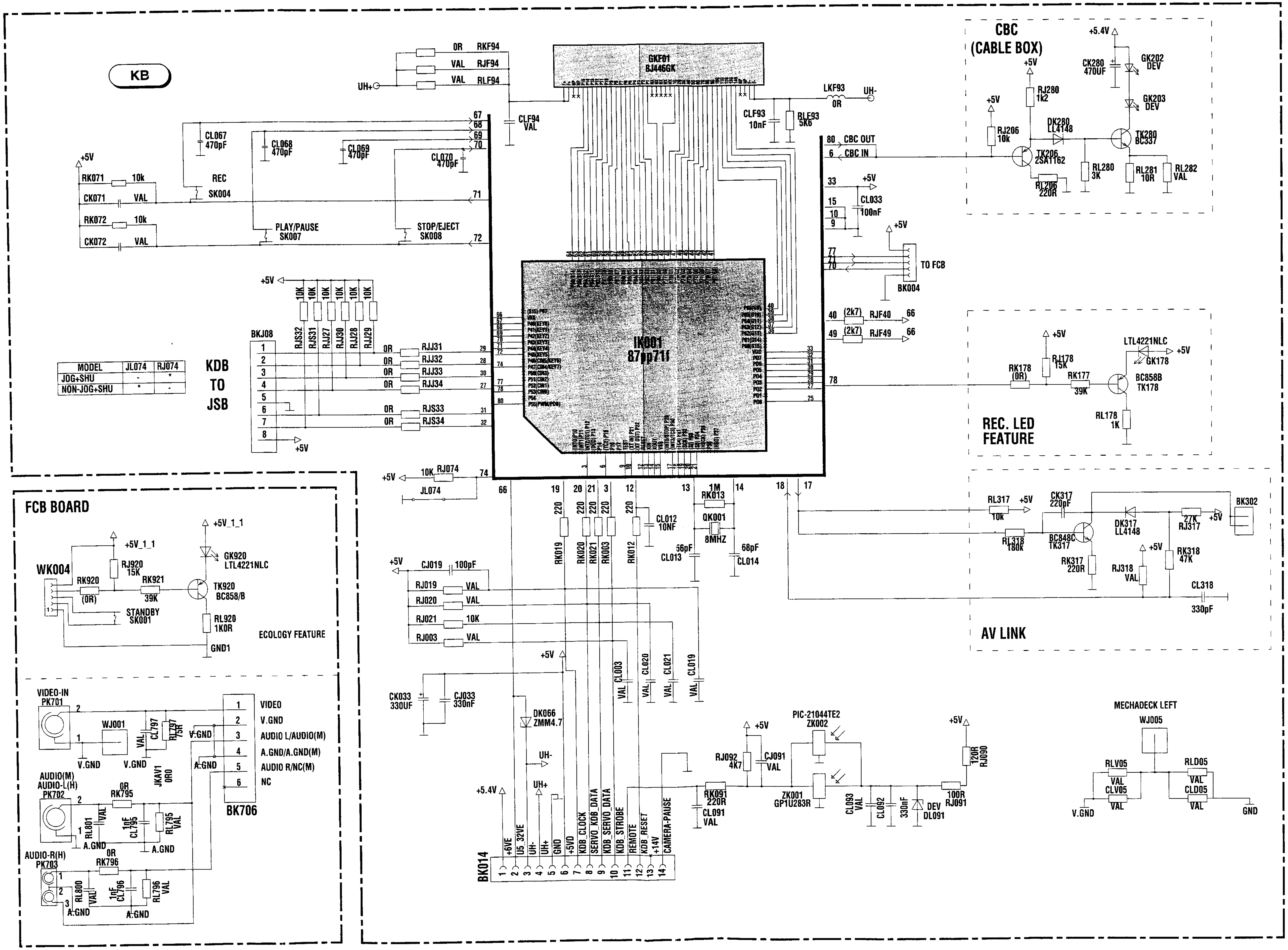
MODEL	JL074	RJ074
JOG+SHU	-	*
NON-JOG+SHU	*	-

MIC/HEADPHONE

MODELS	PART	
	WK806	WK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

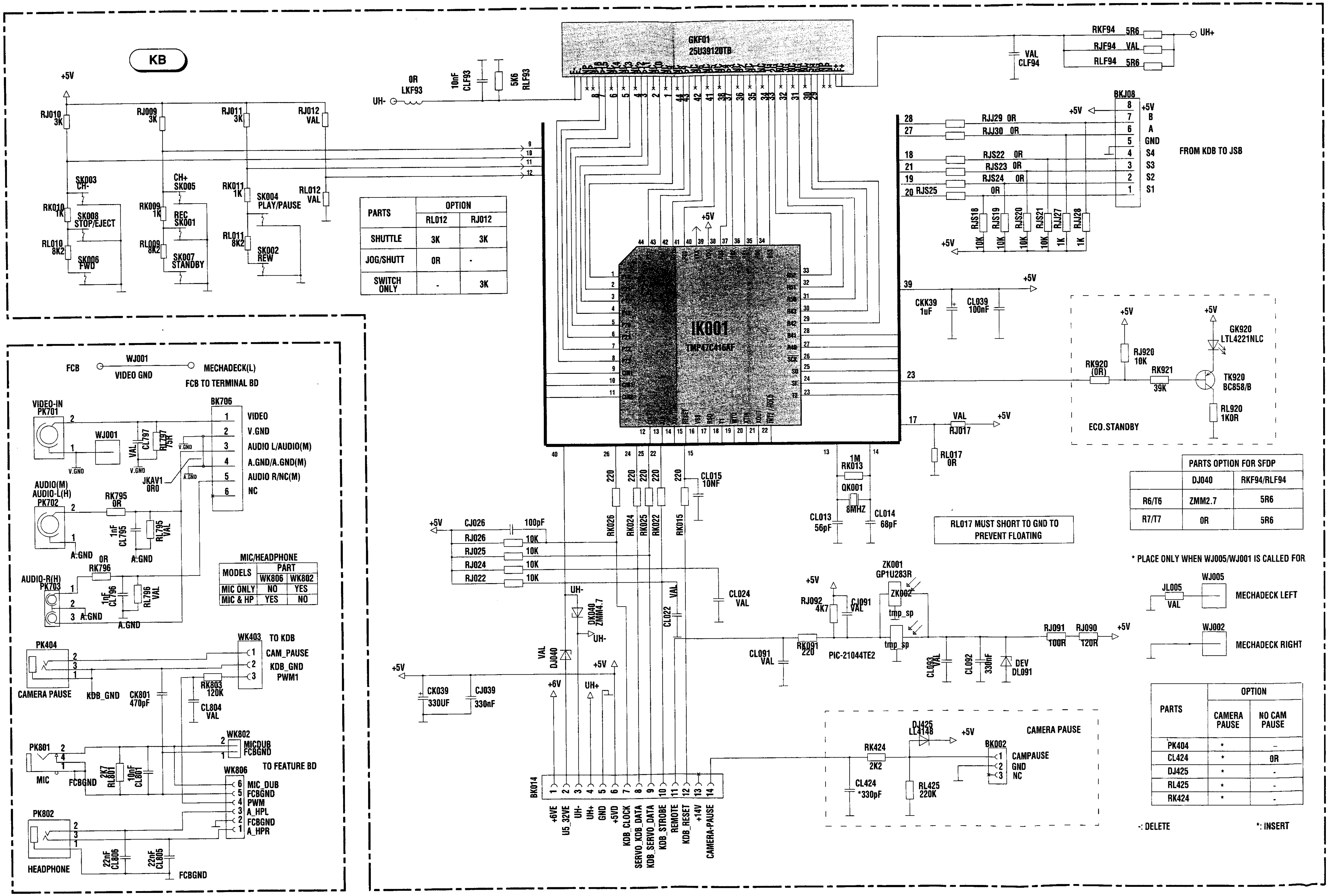
KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR (FV407HV - EV610)

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
GKF01
BJ446GK
IK001
87pp71f
RKF94 0R
RJF94 VAL
RLF94 VAL
UH+
CLF94 VAL
LKF93 0R
UH-
CLF93 10nF
RLF93 5K6
CL067 470pF
CL068 470pF
CL069 470pF
CL070 470pF
+5V
RK071 10k
CK071 VAL
RK072 10k
CK072 VAL
REC SK004
PLAY/PAUSE SK007
STOP/EJECT SK008
CBC OUT
CBC IN
CL033 100nF
TO FCB
BK004
RJF40 2k7
RJF49 2k7
BKJ08
RJS32 RJS31 RJJ27 RJJ30 RJJ28 RJJ29 10K
RJJ31 RJJ32 RJJ33 RJJ34 0R
RJS33 RJS34 0R
KDB TO JSB
MODEL | JL074 | RJ074
JOG+SHU | - | *
NON-JOG+SHU | * | -
RJ074 10K
JL074
CBC (CABLE BOX)
+5.4V
CK280 470UF
GK202 DEV
GK203 DEV
RJ280 1k2
RJ206 10k
DK280 LL4148
TK280 BC337
TK206 2SA1162
RL280 3K
RL281 10R
RL282 VAL
RL206 220R
REC. LED FEATURE
RK178 (0R)
RJ178 15K
RK177 39K
LTL4221NLC GK178
BC858B TK178
RL178 1K
AV LINK
RL317 10k
CK317 220pF
BK302
DK317 LL4148
RJ317 27K
RL318 180k
BC848C TK317
RK317 220R
RJ318 VAL
RK318 47K
CL318 330pF
FCB BOARD
WK004
+5V_1_1
RJ920 15K
RK920 (0R)
RK921 39K
GK920 LTL4221NLC
TK920 BC858/B
STANDBY SK001
RL920 1K0R
ECOLOGY FEATURE
GND1
VIDEO-IN PK701
WJ001
CL797 VAL
RL797 75R
V.GND
AUDIO(M) AUDIO-L(H) PK702
RK795 0R
JKAV1 0R0
RL801 VAL
CL795 1nF
RL795 VAL
A.GND
AUDIO-R(H) PK703
RK796 0R
RL800 VAL
CL796 1nF
RL796 VAL
BK706
1 VIDEO
2 V.GND
3 AUDIO L/AUDIO(M)
4 A.GND/A.GND(M)
5 AUDIO R/NC(M)
6 NC
RK019 RK020 RK021 RK003 220
RK012 220
CL012 10NF
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
CJ019 100pF
RJ019 VAL
RJ020 VAL
RJ021 10K
RJ003 VAL
CK033 330UF
CJ033 330nF
CL003 VAL
CL020 VAL
CL021 VAL
CL019 VAL
DK066 ZMM4.7
+5.4V
BK014
1 +6VE
2 U5_32VE
3 UH-
4 UH+
5 GND
6 +5VD
7 KDB_CLOCK
8 SERVO_KDB_DATA
9 KDB_SERVO_DATA
10 KDB_STROBE
11 REMOTE
12 KDB_RESET
13 +14V
14 CAMERA-PAUSE
PIC-21044TE2 ZK002
RJ092 4K7
CJ091 VAL
RK091 220R
CL091 VAL
ZK001 GP1U283R
CL093 VAL
CL092 VAL
330nF
DEV DL091
100R RJ091
120R RJ090
MECHADECK LEFT
WJ005
RLV05 VAL
CLV05 VAL
RLD05 VAL
CLD05 VAL
GND

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(VPH6920F)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


KB
+5V
RJ010 3K
RJ009 3K
RJ011 3K
RJ012 VAL
SK003 CH-
CH+ SK005
RK011 1K
SK004 PLAY/PAUSE
RL012 VAL
RK010 1K
SK008 STOP/EJECT
RK009 1K
REC SK001
RL011 8K2
SK002 REW
RL010 8K2
SK006 FWD
RL009 8K2
SK007 STANDBY
9
10
11
12
UH-
0R LKF93
10nF CLF93
5K6 RLF93
GKF01 25U39120TB
RKF94 5R6
UH+
RJF94 VAL
RLF94 5R6
VAL CLF94
BKJ08
+5V
B
A
GND
S4
S3
S2
S1
FROM KDB TO JSB
RJJ29 0R
RJJ30 0R
RJS22 0R
RJS23 0R
RJS24 0R
RJS25 0R
RJS18 10K
RJS19 10K
RJS20 10K
RJS21 10K
RJJ27 1K
RJJ28 1K
IK001
TMP47C416AF
39
CKK39 1uF
CL039 100nF
23
17
VAL RJ017
RL017 0R
13
14
1M RK013
QK001 8MHZ
CL013 56pF
CL014 68pF
RK920 (0R)
RJ920 10K
RK921 39K
TK920 BC858/B
GK920 LTL4221NLC
RL920 1K0R
ECO.STANDBY
RL017 MUST SHORT TO GND TO PREVENT FLOATING
* PLACE ONLY WHEN WJ005/WJ001 IS CALLED FOR.
WJ005
JL005 VAL
MECHADECK LEFT
WJ002
MECHADECK RIGHT
CJ026 100pF
RJ026 10K
RJ025 10K
RJ024 10K
RJ022 10K
RK026 220
RK024 220
RK025 220
RK022 220
RK015 220
CL015 10NF
CL024 VAL
CL022 VAL
DK040 ZMM4.7
DJ040 VAL
CK039 330UF
CJ039 330nF
+6V
UH+
ZK001 GP1U283R
RJ092 4K7
CJ091 VAL
CL091 VAL
RK091 220
PIC-21044TE2
CL093 VAL
CL092 330nF
DEV DL091
RJ091 100R
RJ090 120R
CAMERA PAUSE
DJ425 LL4148
RK424 2K2
CL424 *330pF
RL425 220K
BK002
CAMPAUSE
GND
NC
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
FCB
WJ001
VIDEO GND
MECHADECK(L)
FCB TO TERMINAL BD
VIDEO-IN PK701
BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
CL797 VAL
RL797 75R
JKAV1 0R0
AUDIO(M) AUDIO-L(H) PK702
RK795 0R
1nF CL795
RL795 VAL
A.GND
AUDIO-R(H) PK703
RK796 0R
10nF CL796
RL796 VAL
PK404
CAMERA PAUSE
KDB_GND
CK801 470pF
RK803 120K
CL804 VAL
WK403 TO KDB
CAM_PAUSE
KDB_GND
PWM1
WK802
MICDUB
FCBGND
PK801
MIC
FCBGND
2K7 RL801
10nF CL801
WK806 TO FEATURE BD
MIC_DUB
FCBGND
PWM
A_HPL
FCBGND
A_HPR
PK802
HEADPHONE
22nF CL806
22nF CL805
FCBGND

PARTS	OPTION	
	RL012	RJ012
SHUTTLE	3K	3K
JOG/SHUTT	0R	-
SWITCH ONLY	-	3K

MIC/HEADPHONE

MODELS	PART	
	WK806	WK802
MIC ONLY	NO	YES
MIC & HP	YES	NO

	PARTS OPTION FOR SFDP	
	DJ040	RKF94/RLF94
R6/T6	ZMM2.7	5R6
R7/T7	0R	5R6

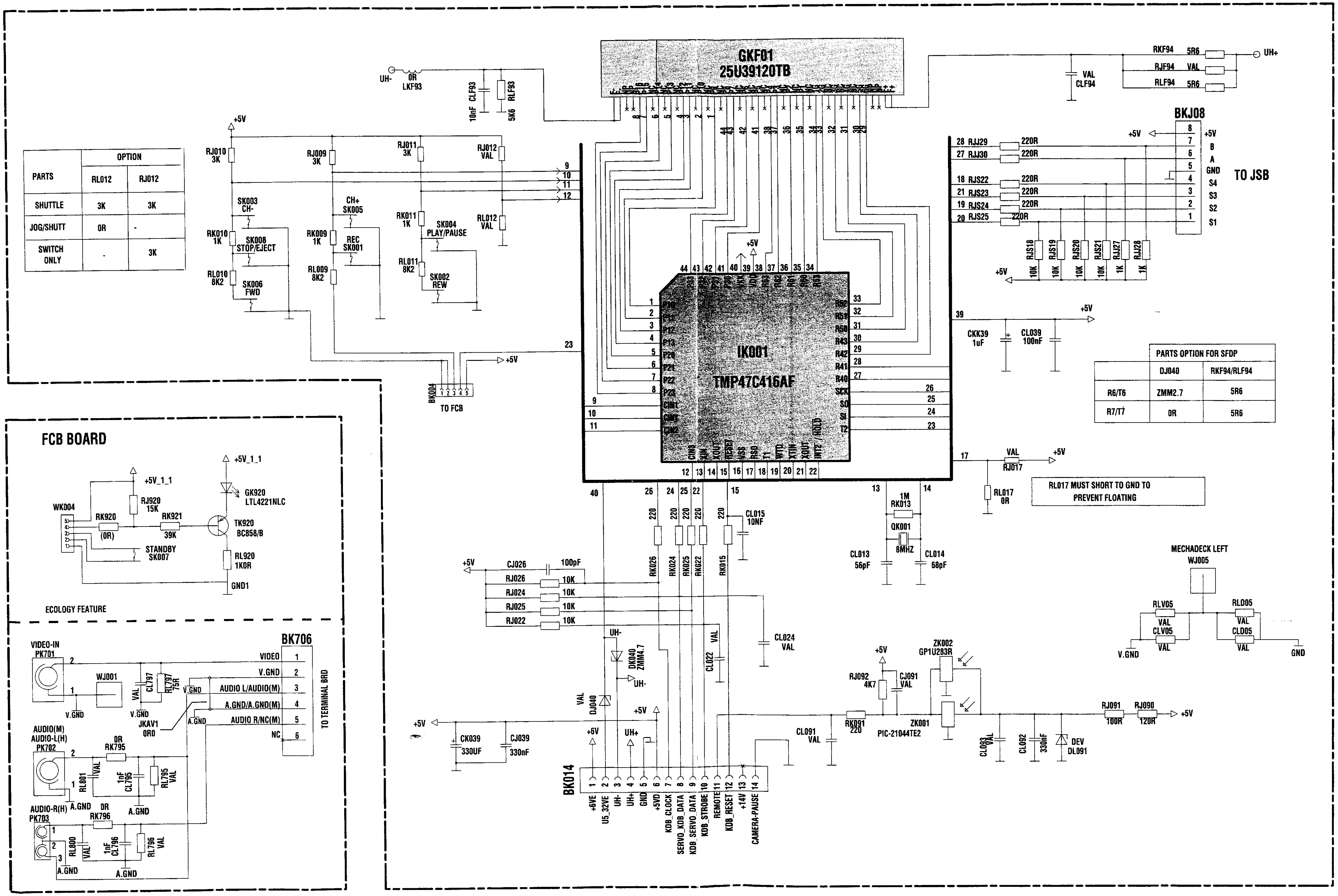
PARTS	OPTION	
	CAMERA PAUSE	NO CAM PAUSE
PK404	*	–
CL424	*	0R
DJ425	*	-
RL425	*	-
RK424	*	-

-: DELETE

*: INSERT

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR *(FV405HV)*

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


GKF01
25U39120TB
IK001
TMP47C416AF
BKJ08
TO JSB
BK004
TO FCB
FCB BOARD
ECOLOGY FEATURE
BK706
TO TERMINAL BRD
BK014
WK004
GK920 LTL4221NLC
TK920 BC858/B
STANDBY SK007
SK003 CH-
SK008 STOP/EJECT
SK006 FWD
CH+ SK005
REC SK001
SK004 PLAY/PAUSE
SK002 REW
QK001 8MHZ
ZK002 GP1U283R
ZK001 PIC-21044TE2
DK040 ZMM4.7
MECHADECK LEFT WJ005
RL017 MUST SHORT TO GND TO PREVENT FLOATING
VIDEO-IN PK701
AUDIO(M) AUDIO-L(H) PK702
AUDIO-R(H) PK703
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
UH+
+5V
S1
S2
S3
S4
GND
A
B

PARTS	OPTION	
	RL012	RJ012
SHUTTLE	3K	3K
JOG/SHUTT	0R	-
SWITCH ONLY	-	3K

PARTS OPTION FOR SFDP

	DJ040	RKF94/RLF94
R6/T6	ZMM2.7	5R6
R7/T7	0R	5R6

INFORMATION - INFORMATIONS - INFORMATIONEN - INFORMAZIONI - INFORMACIONES

GB The table below shows how the Commercial Reference corresponds to the R7000 series Chassis Reference number, it also gives additionnal information that can be used to identify the major components according to chassis type.

F Le tableau ci-dessous donne la correspondance entre les références commerciales et les types de chassis de la série R7000, de plus il apporte un complément d'informations permettant d'identifier les composants montés suivant les chassis.

D Die untenstehende Tabelle zeigt die Zuordnung der Gerätebezeichnungen und der Chassisvarianten der Reihe R7000 an.

I La tabella sottostante indica la corrispondenza tra i riferimenti commerciali e i tipi di telaio della serie R7000. Inoltre, completa l'informazione consentendo di identificare i componenti montati, secondo il telaio.

E El cuadro siguiente presenta la correspondencia ente las referencias comerciales y los tipos de chasis de la serie R7000, además ofrece una información complementaria que permite identificar los componentes montados según el tipo de chasis.

Com. ref.	Chassis	Drum	*Tuner	ECO	Beeper
VPH6650E	R7073PSR	TTN4	FE5100	YES	-
VPH6800G	R7074ME	TB6	FE6200	YES	YES
VPH6810F	T7074PSR	TB6	FE6100	YES	-
VPH6810G	T7074ME	TB6	FE6200	YES	YES
VPH6850U	R7075UR	TB6	FE6200	YES	-
VPH6880	R7078PE	TB6	FE6200	YES	YES
VPH6920F	T7075PSR	TB6	FE6100	YES	-
VPH6920G	T7075ME	TB6	FE6200	YES	YES
VPH6950F	T7078CE	TB6	FE6100	YES	YES
VPH6950G	T7078ME	TB6	FE6200	YES	YES
VPH6950U	T7078U	TB6	FE6200	YES	YES
VPH6980	T7088CE	TB6	FE6100	YES	YES
VPH6990	R7089PE	TB6	FE6100	YES	YES
M9850G	R7174ME	TB6	FE6200	YES	YES
M9860SA	R7175SAR	TB6	FE6200	-	YES
M9885	R7178PE	TB6	FE6100	YES	YES
FV307HV	R7378U	TB6	FE6100	YES	YES
FV405HV	T7374UR	TB6	FE6200	-	YES
FV407HV	T7378U	TB6	FE6200	YES	YES
VK840PS	R7773PSR	TTN4	FE5100	-	YES
VK850PS	T7773PSR	TB6	FE6100	-	YES
VK851PS	T7774PSR	TB6	FE6100	-	YES
EV610	T7478ME	TB6	FE6200	YES	YES

* Currently only FE 6200 tuners are equipped with modulators (CH21-69).

* Actuellement, seul les tuner FE 6200 sont équipés d'un modulateur(CH21-69).

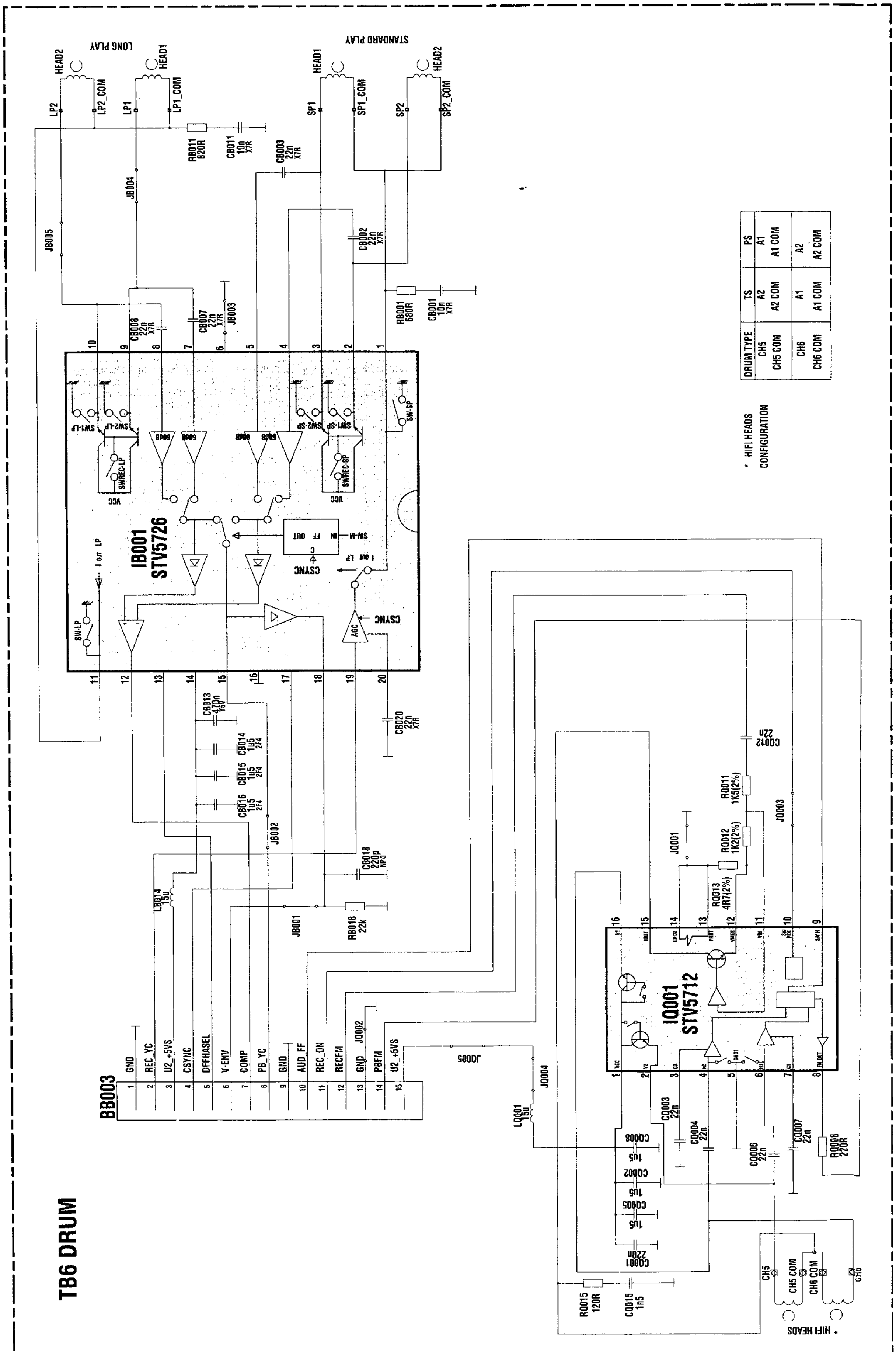
* Zur Zeit sind nur die Tuner FE 6200 mit einem Modulator (Ch21-69) ausgestattet.

* Attualmente, solo i sintonizzatori FE 6200 sono muniti di modulatore (CH21-69).

* Actualmente, sólo los sintonizadores FE6200 están equipados con un modulador (CH21-69).

PRE/REC SCHEMATIC DIAGRAM - SCHEMA PREAMPLIFICATEUR VIDEO - SCHALTBILD KOPFVERSTÄRKER - SCHEMA CIRCUITI PREAMPLIFICATORE - ESQUEMA DE LOS CIRCUITOS PREAMPLIFICADOR DE GRABACION

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TB6 DRUM
LONG PLAY
STANDARD PLAY
HEAD1
HEAD2
LP1
LP1_COM
LP2
LP2_COM
SP1
SP1_COM
SP2
SP2_COM
RB011 620R
CB011 10n X7R
CB003 22n X7R
CB002 22n X7R
RB001 680R
CB001 10n X7R
CB008 22n X7R
CB007 22n X7R
JB003
JB004
JB005
IB001
STV5726
SW1-LP
SW2-LP
SWREC-LP
SW1-SP
SW2-SP
SWREC-SP
SW-SP
SW-LP
VCC
60dB
SW-H
IN
FF
OUT
C
CSYNC
AGC
I out LP
CB013 470n 16V
CB014 1u5 Z/4
CB015 1u5 Z/4
CB016 1u5 Z/4
CB020 22n X7R
CB018 220p NPO
RB018 22k
JB001
JB002
LB014 15u
BB003
GND
REC_YC
U2_+5VS
CSYNC
DFFHASEL
V-ENV
COMP
PB_YC
GND
AUD_FF
REC_ON
RECFM
GND
PBFM
U2_+5VS
JQ002
JQ005
JQ004
LQ001 15u
IQ001
STV5712
CQ012 22n
RQ011 1K5(2%)
RQ012 1K2(2%)
RQ013 4R7(2%)
JQ001
JQ003
CQ003 22n
CQ004 22n
CQ006 22n
CQ007 22n
RQ008 220R
CQ008 1u5
CQ002 1u5
CQ005 1u5
CQ001 220n
RQ015 120R
CQ015 1n5
CH5
CH5 COM
CH6 COM
CH6
* HIFI HEADS
* HIFI HEADS CONFIGURATION

DRUM TYPE	TS	PS
CH5	A2	A1
CH5 COM	A2 COM	A1 COM
CH6	A1	A2
CH6 COM	A1 COM	A2 COM

Abbreviations - Abreviations - Abkürzungen - Abbreviazioni - Abreviaciones

AC	*Alternating Current*
ACC	*Automatic Colour Control*
ACK	*Automatic Colour Killer*
AD.REF	*Analog/Digital Converter Reference*
AE	*Audio Erase*
AFC	*Automatic Frequency Control*
AGC	*Automatic Gain Control*
A-IF	*Audio IF*
ALC	*Automatic Level Control*
AMP	*Amplifier*
APC	*Automatic Phase Control*
AP.CONT	*Aperture Control*
AV	*Audio-Video*
A/V SWP	*Audio/Video Switching Point (DRUM FF)*
B.EMPH	*Burst Emphasis*
B.DEEMPH	*Burst Deemphasis*
BG	*Burst Gate*
BID	*Burst Identification*
BLK	*Blanking*
BPF	*Band Pass Filter*
CAP	*Capstan*
CBC	*Cable Box Control (Satellite Control)*
CCD	*Charge Coupled Device*
CH	*Channel*
CFG	*Capstan Frequency Generator*
CLK	*Clock*
COMP	*Comparator*
CONV	*Converter*
CPWM	*Capstan Pulse Width Modulation*
C-REG	*Capstan Regulation*
CR	*Color Rotary*
CS	*Chip Select*
CSYNC	*Composite Synch*
CTL	*Control*
DC	*Direct Current*
D.LIM	*Double Limitter*
DEEMPH	*Deemphasis*
DET	*Detector*
D-FG	*Drum Frequency Generator*
DFF	*Drum Flip Flop*
DIF.EQ	*Differential Equalizer*
DIG	*Digital*
DLY	*Delay*
DOC	*Drop Out Compensation*
E-E	*Electronic-Electronic*
EMPH	*Emphasis*
ENV	*Envelope*
EP	*Extended Play*
EQ	*Equalizer*
F.E	*Full Erase*
F.REW	*Fast Rewind*
F.FWD	*Fast Forward*
F/R	*Forward/Rewind*
FCB	*Front Connection Board*
FF	*Fast Forward*
FG	*Frequency Generator*
FMCI	*FM Carrier Interleave*
FWD	*Forward*
GND	*Ground*
GCA	*Gain Controlled Amplifier*
HASEL	*Head Amplifier Select*
HAB	*Head Amplifier Board*
HD	*Horizontal Synch Pulse*
HPF	*High Pass Filter*
I.R	*Infra Red*
ID	*Identification*
INP/IN	*Input*
KDB	*Key Display Board*
LIM	*Limitter*
LP	*Long Play*
LPF	*Low Pass Filter*
MESECAM	*Middle East Secam*
NC	*Noise Canceller*
OSD	*On Screen Display*
PB	*Play Back*
PB-C	*Play Back Chroma*
PCB	*Printed Circuit Board*
PDC	*Program Delivery Control*
PG	*Pulse Generator*
PH	*Pseudo Horizontal Synch*
PIF	*Picture IF*
PLL	*Phase Locked Loop*
PS	*Phase Switch*
PV	*Pseudo Vertical Synch*
PWM	*Pulse Width Modulation*
REC	*Record*
REC-C	*Record Chroma*
REW	*Rewind*
REV	*Reverse*
SCL	*Serial Clock*
SDA	*Serial Data*
SEC	*SECAM*
SU REEL	*Supply Reel*
SMPS	*Switch Mode Power Supply*
SP	*Standard Play*
SS	*Synch Separator*
SW	*Switch*
TU REEL	*Take Up Reel*
TMB	*Terminal Board*
VAL	*Components without value and not on the PCB*
VCA	*Voltage Controlled Amplifier*
VCO	*Voltage Controlled Oscillator*
VCR	*Video Cassette Recorder*
VD	*Supply Voltage Digital*
VE	*Voltage (Ever)*
V-ENV	*Video Envelope*
V-IF	*Video IF*
VS	*Voltage (Switched)*
VM	*Motor Voltage (Drum & Loading motor)*
VMC	*Motor Voltage (Capstan motor)*
VPS	*Video Program System*
W/D	*White/Dark*
Y/C	*Luminance/Chrominance*